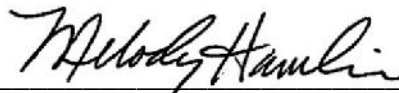


# Town of Newbold Facilities Analysis Study Report

## Town of Newbold – Building Committee Town of Newbold, Wisconsin

Prepared for:  
Town of Newbold Building Committee  
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Town of Newbold, Wisconsin

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Project Manager

11/05/19 Draft, 11/06/19 Revised,  
7/14/20 Final

\_\_\_\_\_  
Date



Rick L. Schroeder, AIA

7/14/20

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Date





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# Town of Newbold – Facilities Analysis Study Report

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## 1.0 Executive Summary

Rick Schroeder and Melody Hamlin of Funktion Design Studio, LLC met with Mark Fetzer, Director of Public Works and Jim Staskiewicz, Town Supervisor on October 3, 2019. Mark escorted us through each facility provided information on each facility throughout the tour, Jim assisted with the Town Hall. The former Newbold Elementary School was inspected on September 19, 2019, by the Funktion Design Studio Evaluation Team. The former school building that is currently being used as a private residence located at 4630 Apperson Drive in the Town of Newbold.

The buildings as inspected are in reasonable condition. No structural defects requiring immediate attention were observed, and as such, the original buildings should be considered structurally viable. The buildings are old, and show their age, but that has not diminished the utility value or function of the buildings.

If nothing is done to repair the masonry at the town shop or keep the exterior sealed from water infiltration, it is reasonable to expect 5-7 years additional useful life before the masonry problems affect the building. If the recommended tuck pointing, and regular maintenance is done, the additional life of the buildings should be assumed to be more in the range of 10-15 years.

If nothing is done to repair the town hall roof and wall ventilation, It is reasonable to expect continuing deterioration of the interior ceiling, additional condensation issues, raising energy cost and mechanical system issues. It was noted that currently the town has budgeted \$25,000 per year to maintain the facility. If the recommended ventilation issues are corrected and a new mechanical unit is added per current regulations, the additional life of the building should be assumed to extend its useful life to 15-20 years.

The electrical systems, as inspected, are in reasonable condition. Electrical gear and equipment in each building are approaching the end of their useful life. Some minor code violations exist in each building. The electrical systems are aged, and as a result can be inefficient and difficult to find replacement parts for.

If nothing is done to replace or repair the existing electrical systems, it is reasonable to expect 5-10 years additional useful life from the existing equipment.

The mechanical and plumbing systems in the facilities are reflective of their age and building usage. There are a few items that should be addressed, primarily regarding equipment age, functionality and building code. With some added equipment maintenance, the facilities would be considered in reasonable condition. Overall, the Town should expect some equipment failures in the upcoming years.

The owner of the former Newbold Elementary School noted that an asbestos report was completed on the facility in the past. Per the conversation the following items were noted to be of concern regarding asbestos containing hazardous materials, zonolite exterior wall block insulation, piping insulation joints located in the mechanical piping chase and the tile floor mastic.

We recommend that the Town invest in acquiring the services of a hazardous environmental consultant to test the town owned facilities relative to the completion of the facility evaluation study for the means of developing opinion of probable cost options for removal.

## 1.1 Evaluation Team

The Funktion Design Studio Evaluation Team consisted of Rick Schroeder, AIA, and Melody Hamlin, Associate AIA., for the Town Shop and Town Hall. The evaluation was conducted to evaluate and observe the condition of the existing facilities, non-compliant building code related issues and ADA accessibility of the existing facility.



## Town of Newbold – Facilities Analysis Study Report

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Funktion Design Studio developed the following Evaluation Team of consultants to perform the arm's length evaluation of architectural elements, structural, HVAC, plumbing and electrical systems in the former Newbold Elementary School. The Funktion Design Studio Evaluation Team consisted of Melody Hamlin, Project Manager, Rick Schroeder, AIA. The evaluation was conducted to evaluate and observe the condition of the existing facilities, non-compliant building code related issues and ADA accessibility of the existing facility. Structural observation was completed by Dave Kampe, PE of ddk Engineering to evaluate the structural. HVAC observation was completed by Dennis Kramm, D.E.S. of Kramm Mechanical Design, LLC to evaluate the HVAC. Plumbing observation was completed by Dale Schlieve, D.E.S. of CEC to evaluate the plumbing, well and septic. Electrical observation was completed by Ron Janikowski, D.E.S. of Badger State Consulting, LLC to evaluate the electrical.

### **1.2 Evaluation Process**

The first step in our process for evaluation was to gather the available existing building plans and site information for the study facilities. The drawings were used for base information during our general arm's length observation facility and site conditions. The Evaluation Team performed an arm's length evaluation of the facility's architectural and site elements. No destructive tests were performed; therefore, all information gathered was visually and/or verbally gathered.

The Funktion Design Studio Team documented and researched the code related non-compliant issues and the existing s.f. matrix of the current programmed spaces of each facility.

On October 28, 2019 Funktion Design Studio, LLC conducted a tour of each facility with the Building Committee to review the existing physical conditions, working environment and staff obstacles and issues. Following the tour, the group reconvened at the Town Hall for the workshop to gather input into the existing uses of the facilities and the potential new uses of the facilities for the development of a master programming s.f. matrix. A public meeting was held to inform and allow the public to offer input regarding the existing conditions, current and future services provided with in the Town of Newbold that where germane to the town shop and town hall facilities.

The Funktion Design Studio Team developed four initial conceptual options of the town shop and hall and two options of the former elementary school conversion to the town hall for presentation, discussion and feedback of the proposed s.f. programmed matrix and site development plan. The initial options where refined based on the presentation feedback at the December 5, 2019, building meeting presentation.

The Funktion Design Studio Team implemented the building committee input and refined priorities on the December 13, 2019 building meeting presentation for the execution of the final developed facility options.

The final options recommendation was delivered on January 22, 2020 during the board meeting presentation.



## Town of Newbold – Facilities Analysis Study Report

### Town Shop



6704 Bridge Road

3 Acres





## Town of Newbold – Facilities Analysis Study Report

### Town Hall



4608 Apperson Drive

7.5 Acres





## Town of Newbold – Facilities Analysis Study Report

### Former Newbold Elementary School



**4630 Apperson Drive - Hoban Family Trust**

**8 Acres**



## Town of Newbold – Facilities Analysis Study Report

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## Town of Newbold – Facilities Analysis Study Report

### 2.0 Site Civil Observation

On October 3, 2019, observations were conducted at the Town of Newbold Shop, located in Mc Naughton on River Road and the Town Hall located off Hwy 47, to determine existing site conditions. The following observations were noted from the site visit, reviewing aerial photographs and previous visits to the facility.

#### 2.1 Town Shop Site Observation

The existing town shop has parking adjacent to the south office entrance constructed of asphalt pavement. Additional parking areas are located around the site including gravel yard areas. There are no designated handicapped parking spaces on site. The parking areas do not have protected pedestrian routes. The concrete apron at the service doors and overhead doors is settling on the site into the building and asphalt patches have been added to create a flush edge for the movement of equipment into the shop area. The existing site sheet drains from the building elevation out to the existing adjacent roads and site limits. The roof area drains directly to the pavement and surrounding grade along the west and east side of the building. Due to this concentrated surface water the area is known to become very icy requiring continuous measures to minimize slip and fall conditions. There are additional access routes to side and back doors that have steeper grades and can become slippery during winter conditions. The site is flat along the east and south side of the building, the north side is elevated by approximately 24" above the adjacent sloping grade down to the cold storage and utility field elevations. Existing gravel drive wrap the perimeter of the west, north and east side of the shop.

Exterior site lighting includes one yard light adjacent to the fueling system. The remainder of the site is lit by the means of exterior wall lighting at the overhead doors and exterior service doors.

There is a fueling system that was not reviewed for regulatory compliance. The existing asphalt pavement has been extended to the fuel system.

The site has two areas for materials storage, the west area along the site lot line is currently designated for yard materials, mulch, and accessory equipment. The north east side of the lot has covered sand and salt mixed materials.

A cold storage building for equipment that will not fit in the heated storage of the shop sits near the shop parallel to the north property line. The building has a gravel drive around the building. Accessory plow equipment is stored on the north side of the building. The placement of the building provides for a tight maneuvering of equipment around the site and limited accessibility for any expansion to the current facility or new utilities.

#### 2.2 Town Shop Site Utilities Observation

**Gas Utility Service** The building has a liquid propane gas service on the west side of the drive adjacent to the building.

**Water Service** The building has a drilled well on the east side of the building.

**Sanitary Service** The building is served by a septic system consisting of a concrete tank and two dry wells. The floor drains current go to a separate 2,500-gallon concrete tank that requires pumping. It was noted during our observation that the septic systems are beyond their useful life expectancy and will require a new system if the facility remains in operation on site.

**Electrical Service** The facility is served by a 200-amp single phase service, 3 phase is available at the road adjacent to the site.

#### 2.3 Town Hall Site Observation

The existing town hall has parking adjacent to the south building entrance and along the rear east side of the hall constructed of asphalt pavement. Additional overflow parking areas are located along the grass areas of the north access



## Town of Newbold – Facilities Analysis Study Report

road. There are two designated handicapped parking spaces on site adjacent to the covered front entry. The parking areas do not have protected pedestrian routes. There are concrete aprons at the service doors and covered entry along with a sidewalk to the west exit door. The hall has a total of three asphalt drives adjacent to the building, the hall designated drive is west of the building off of Apperson Drive, the south entrance is a shared drive with the Town fire department and the last is the fire department service drive along the north side of the building. The existing site sheet drains from the building elevation out to the existing adjacent drives and green space around the perimeter of the building. The site is flat with little elevation around the structure; however, the building is built lower than the adjacent highway and town road. The roof area drains directly to the concrete pavement along the west side allowing water to penetrate down along the building foundation causing water infiltration in the basement and to the grass areas along the east side of the building. Due to this concentrated surface water the area is known to become very icy requiring continuous measures to minimize slip and fall conditions. There is green space/lawn along the west, north and east side of the facility.

Exterior site lighting includes one yard light adjacent to the north west building exit. The remainder of the site is lit by the means of exterior wall lighting along the south side of the building at the exterior service doors.

It is important to note that the hall site is shared with the adjacent Town Fire Department. The cross traffic and parking during heavy activities can cause operation issues for the fire department. There is a designated town playground along the north access drive.

### **2.3 Town Hall Site Utilities Observation**

<b>Gas Utility Service</b>	The building has a natural gas service on the north side of the building with a total of three entry points into the building from the exterior.
<b>Water Service</b>	The building has a drilled well on the north east side of the building directly adjacent to the building transition interior corner.
<b>Sanitary Service</b>	The building is served by a conventional septic system. The existing fire department septic system access has been terminated. The tank was filled in with sand. The previous fire department toilet room and floor drain are no longer in use as there where on the removed septic system.
<b>Electrical Service</b>	The facility is served by a 200-amp single phase service feed from the new fire station. The entire building load is noted to be on the fire station generator. No 3-phase power service in the immediate area.

Note that if the same type of facilities were built today, at the current locations they are now, each site would be required to meet all the local, state and federal regulations such as zoning, storm water management, DNR, etc. requirements.

Examples of this would be:

Zoning setbacks – building, parking, signage, etc.

Driveway access restrictions

Parking space and layout requirements

Accessible parking and route requirements

Lighting & Landscape requirements

Stormwater management items such as:

Total suspended solids (TSS) removal, Peak flow discharge, Infiltration, etc.

Since the facilities are existing conditions they are “grandfathered” in as such.





## Town of Newbold – Facilities Analysis Study Report

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### 2.4 Site Civil Observation

September 19, 2019, inspections were conducted at the existing Newbold Elementary School building that is currently being used as a private residence located on Apperson Drive in the Town of Newbold, relative to the existing site conditions.

### 2.5 Former Elementary School Site Observation

The former elementary school has parking adjacent to the west school entrance constructed of asphalt pavement. Asphalt service drive is located along the north and south of the building that also served as a hard surface play area when the school was in operation. There are no designated handicapped parking spaces on site. The parking areas do not have protected pedestrian routes. The concrete apron at the service doors appear to be in fair condition. The existing site sheet drains from the building elevation away to the existing adjacent roads and site limits. The site is flat around the perimeter of the building the north side previous playground is lower in elevation. The remaining limits of the site are green space areas. The roof area drains directly to the pavement and surrounding grade around the perimeter of the building. Due to this concentrated surface water the area is known to become very icy requiring continuous measures to minimize slip and fall conditions. The water has created staining and mold growth around the perimeter of the building on the lower 2 feet of the exterior walls. There are additional access routes to the north and south rear portion of the building.

The exterior site lighting is lit by the means of exterior wall lighting near the exits.

### 2.6 Former Elementary School Site Utilities Observation

#### Gas Utility Service

The building was originally serviced by natural gas on the north side of the building along the mechanical room. The owner only occupies the building during the summer months and elected to remove the service as the building is not heated. A new service will need to be installed if the building is repurposed into a town hall and community facility.

#### Water Service

The building has a drilled well and appears to be working without any issues.

#### Sanitary Service

The building is served by a septic system, there is no record of this system at the Oneida County zoning office. We are assuming it was sized properly for 150+ students and employees. The septic tank has been inspected on a regular basis per county regulations. The system should be inspected including a soil boring adjacent to drain field to estimate size of system to determine its capabilities

#### Electrical Service

The building is fed with an old 400-amp single phase O/H service. Metering is done thru a current transformers (CT's) at the service mast, Wisconsin Public Service (WPS) would require this be updated to current standards



## Town of Newbold – Facilities Analysis Study Report

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## Town of Newbold – Facilities Analysis Study Report

### 3.0 Architectural Observation

On October 3, 2019, Observations were conducted at the Town of Newbold Shop, located in Mc Naughton on River Road and the Town Hall located off Hwy 47, relative to the existing architectural conditions of the buildings, to identify code compliance, and ADA accessibility non-compliance.

#### 3.1 Facility Evaluation Town Shop

The building functions as a vehicle/equipment repair garage with auxiliary space for storage, parts, office, break area and toilet rooms. The original building was constructed in 1964 as the town shop and hall. The shop area was 1900 s.f. and the hall was 560 s.f. In 1976 the town added a new gable roof with insulation over the existing structure. In 1991 a 1,220 s.f. addition was added to the north side of the existing shop area for additional vehicle storage.



South Elevation



West Elevation



South Elevation

#### Existing Envelope Systems

**Roof:** 4" Roof precast slab (lightweight precast perlite concrete slab) with prestressed cast in place joist 5'-0" o.c. 1" fesco board of the roof slab. Foam tapered insulation from 1" to 5" over the entire roofs with a built-up asphalt applied roof per 1973 documentation. In 1976 a 4in12 gable wood truss system at 24" o.c. was added with 6" of batt insulation, wood decking and asphalt shingle roof. The roofs are ventilated by the means of a ridge vent, eave and overhang soffits. The 1991 addition roof is a 4in12 gable wood truss system at 16" o.c., minimal batt insulation, wood decking, ridge, overhang and eave ventilation, and asphalt shingle roof.

**External Walls:** Masonry single wythe block walls with blown in insulation not original to the building, painted interior and exterior walls, masonry reinforced concrete block pilasters. The 1991 addition is 2x6 wood stud walls at 16" o.c., with batt insulation in the stud cavity over a 6"x8" perimeter concrete block sill with painted exterior T1-11 wood panels,

**Openings:** Glass block with single glazed operable metal awning windows. Insulated sectional overhead doors, hollow metal door frame and insulated hollow metal service door panels. Interior wood frame and solid core doors. 1991 addition window units are wood frame with insulated glass. The exterior service door is a wood framed pre-hung insulated metal door.

**Internal Partitions:** Concrete block walls.

**Ceilings:** Painted underside of the original roof slab. 1991 addition has gypsum board.

**Slab / Foundation:** 6" concrete slab on grade with mesh reinforcing. 12" concrete block foundation over concrete footing 4'-0" below grade. 1991 addition has a concrete slab with an exterior integrated grade beam (no depth information available)



## Town of Newbold – Facilities Analysis Study Report



East Elevation

### **Existing Conditions – Original Structure**

The building is in fair condition and structurally sound with minor exterior wall cracks and separation.

The roof is assumed to be adequate as the shingle are newer and appear to be in good shape. During our visit it was noted that the roof has additional batt insulation added, exact amount is unknown. The gable end siding is in poor condition. (Photo G, H, I) The prestressed joist extending beyond the exterior wall are delaminating due to freezing and thawing conditions of the exterior environment. (Photo J)

Exterior service doors are in poor shape, the frames are rusted through. (Photo K, J, L, M) Overhead doors are insulated with vision glass and motorized openers are in good condition, the exterior weather stripping has failed. (Photo N) Slab at the overhead doors has areas of edge spalling, where the overhead door has no sealing capabilities to the slab. (Photo O). Window units are inset into glass block with single glazed operable units. (Photo P, Q) Many openings have been blocked by furnishings allowing for no access. The units are in poor to failed condition. Interior wood doors are in fair condition.

Interior ceiling exposed lightweight perlite slab material is in good condition except for the shop area around the radiant heater exhaust pipe. (Photo R)

Exterior block wall has several areas of deterioration starting with some minor cracking where moisture has penetrated the walls system and freezing, and thawing cycles have caused some spalling and mold buildup. The interior side of the shop exterior walls also have issues of spalling, additionally due to the salt from the environment brought into the facility by the equipment. All the control joints and sealant joints have failed within the exterior wall, allowing moisture to penetrate the wall cavity and interior of the structure. The injected insulation within the exterior wall cavity is questionable regarding the energy performance, it is likely the insulation is only present within a few feet of the area of injection and that the entire wall is still lacking and insulation. (Photo S) The walls are in fair condition. (Photo A-F)

### **Existing Conditions – 1991 Vehicle Storage Addition**

The building is in poor condition. The structure is assumed to be sound; areas of structural concern include the foundation/slab crack at the interior of the overhead door, the crack runs west the entire length of the overhead door approximately 3' into the room. The perimeter block curb does not appear to be anchored to the foundation with portions removed at some point in time to allow water to run out of the building that has collected on the interior concrete slab. (Photo T) The interior slab has no slope or interior floor drainage.

The roof is assumed to be adequate as the shingle are newer and appear to be in good shape.

The exterior service door is in poor shape and inoperable at the time of the visit. It appears that the door frame is binding up within the exterior wall not allowing the door to freely operated. Overhead door is insulated with vision glass and motorized opener. The track has a tight radius for lifting due the wall height causing the door to jerk and bind as it is operated, the door is in good condition. (Photo V) Window units are in fair condition. (Photo W) Interior ceiling is exposed gypsum board that was



## Town of Newbold – Facilities Analysis Study Report

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never finished. Moisture was observed in the ceiling by spots on the gypsum board ceiling.

Exterior wall is exposed gypsum wall board that was never finished. There have been many areas repaired due to failure, most likely damaged by equipment stored along the exterior walls. (Photo X) The exterior wall wood panels have failing at the bottom of the panels adjacent to the concrete sill block curb due to moisture. The exterior wood panels and trim are in poor condition. (Photo U, Y, Z)





## Town of Newbold – Facilities Analysis Study Report

### 1964 Original Structure



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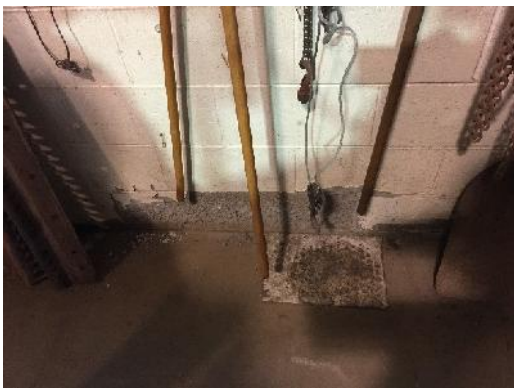
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C



D



E



F



## Town of Newbold – Facilities Analysis Study Report



G



H



I



J



K



L



M



N



O





## Town of Newbold – Facilities Analysis Study Report



P



Q



R



S

### 1991 Vehicle Storage Addition



T



U





## Town of Newbold – Facilities Analysis Study Report



V



W



X



Y



Z



## Town of Newbold – Facilities Analysis Study Report

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### **Proposed Envelope Improvements – Based on final accepted study proposed option**

The building committee has recommended a new public works facility to replace the current facility due to the lack of required s.f. of the current and future needs of the facility, deficiencies with the mechanical systems, failing septic and holding tanks, condition of the 1991 building addition, non-compliant ADA issues, functional operations space and the required building maintenance of the existing facility.

Options were presented to convert the main structure to cold storage.



## Town of Newbold – Facilities Analysis Study Report

### 3.2 Facility Evaluation Town Hall

The building serves as a town hall with community activity space available. The building functions consist of an open community space that is rentable, used for voting and operates as the official town board room, warming kitchen with open serving counter doubling as a work space, office, men's and women's toilet rooms, voting storage, new entry vestibule, large open area that once housed the town fire department. This area is currently being used for storage and is accessible to the community for a larger area for events. There is an existing single user toilet room and garage catch basin that has been abandoned due to a fail septic system. The original building is a pre-engineered structure with a 4'-0" deep foundation, concrete slab on grade floor and pre-engineered exterior metal wall and roof panels. The structure was built in 1970 as a fire department with 2,047 s.f. In 1984 a pre-engineered building addition with a full basement foundation was added to the existing structure. The basement was originally designed for mechanical and storage space with two exits. The second exterior exit has been removed, leaving only one exit from the basement. The town hall basement is 2,057 s.f., main floor addition was 2,875 s.f. The existing west wall of the original pre-engineered wall was opened, and a new pre-engineered portal frame was added. It is important to note that there is a floor elevation difference between the original elevation and the addition elevation. All adjacent connections have been accommodated and are even at the front entry vestibule into the community room and storage area along with the corridor at the toilet rooms. In 1992 the facility was reroofed with a 60-mil single ply membrane roof. In 2004 the fire department moved out of the facility into a new facility on the same site. In 2008 the town hall south elevation was altered to remove the large overhead doors, minor interior alterations and a new exterior facade.



South Elevation



Partial West Elevation

#### Existing Envelope Systems

**Roof:** Pre-engineered metal roof girders, roof purlins. 4" foil faced pinched insulation was the original "Hot Roof". Over time 12" batt insulation with a vapor barrier was laid over the existing suspended ceilings throughout the facility. In 1992 molded EPS insulation fillers were added to the original roof deck with a continuous 1" insulation board. A 60-mil single ply fully adhered rubber membrane was added. Attic ventilation was added to the roof and walls, resulting in a semi-conditioned attic space.

**External Walls:** Pre-engineered metal building primary column frames, 8" horizontal wall girts with a 1" offset, 1 1/2" metal exterior wall panel. Interior wall is constructed of 2x4 wood studs to the underside of the roof girder and filled with R-19 batt insulation, vapor barrier and gypsum board at the perimeter of the town hall building. The addition was constructed with pre-engineered metal building primary column frames, 8" horizontal wall girts with a 1" offset, 4" foil faced pinch insulation with 1 1/2" metal exterior wall panel. The South elevation underwent a new facade alteration. The exterior metal wall panel was removed and replaced with a new fiber cement siding and lower base gypsum wall panel.

**Openings:** Vinyl slide by windows with 1/2" insulated glass in the town hall along the west elevation. Exterior clad wood slide by windows with 1/2" insulated glass at the south elevation. Hollow metal frame and insulated hollow metal door panels at the existing fire department and west exit doors, aluminum storefront and side light at the entry vestibule.

**Internal Partitions:** Concrete block wall and 2x4 wood stud partitions with gypsum wall board.

**Slab / Foundation:** Poured concrete floor slab in the basement, 8" un-insulated concrete block full basement foundation, precast floor planks with concrete topping over the basement area. 4'-0" block frost wall at the



## Town of Newbold – Facilities Analysis Study Report



Partial West Elevation



Partial East Elevation

remaining perimeter of the building. Concrete slab on grade with mesh reinforcing within the addition space.

### Existing Interior Systems

**Ceilings:** Underside of precast floor plank in the basement and suspended acoustical ceiling panels at the main level.

**Flooring:** Painted exposed concrete slab in the basement. Resilient vinyl sheet flooring walk off floor tile in entry vestibule, ceramic tile in toilet rooms, and exposed slab in the existing fire department area.

**Base trim:** Vinyl base at all main level walls and ceramic tile base in toilet rooms.

**Wood Doors/Trim:** All interior doors are wood frame, solid core wood doors. Interior and exterior wood trim at perimeter of the door frame. Wood casework and plastic laminate countertops in the warming kitchen.

**Toilet Rooms:** Metal toilet partitions, 2 sanitary fixtures per room.

### Existing Conditions

The building is in fair condition and structurally sound. The pre-engineered metal building assembly has been altered from its original design adding a level of complex problems over the years. The original roof was designed as a hot roof and then through the method of adding addition insulation and venting the roof assembly became a semi conditioned vented attic space. Based on our discussion with Supervisor Staskiewicz, the building was tested using a blower door method. The result ended with an air infiltration equal to 438 sq. inches equal to a 21"X21" square open hole in the side of the building. Equating to an additional heating load on the furnace, adding additional energy cost per year. The rubber membrane roof system is over 27 years old. The assembly is in poor to failed condition.

The front exterior wall facade is subject to expansion and contraction, it is assumed that the furring method was attached to the existing horizontal wall girts, making it difficult to control. There are numerous areas of damage to the gypsum wall panel that have been repaired. Most of the sealant joints have failed at the material transitions. (Photo F, G, H) The remaining metal wall panels are in good condition, the corner cover trim is not sealed well allowing vermin to enter the facility. (Photo I)

Exterior service doors are in good shape. Vinyl windows show wear and gasket shrinkage, they are in fair condition. (Photo J) Exterior clad wood windows are in good condition. (Photo K).

The interior suspended ceilings are all in poor to failed condition. (Photo A-D) The existing ceramic tile and vinyl flooring is in fair condition. Some cracking and peeling of the vinyl floor were noted.

The existing foundation is structurally sound however there are signs of moisture penetration through the block foundation wall. The wall is deteriorating through the means of freeze thaw cycles causing the wall to blister and crumble. (Photo L)





## Town of Newbold – Facilities Analysis Study Report



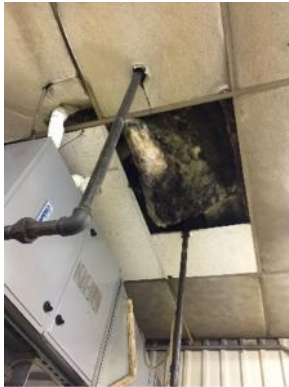
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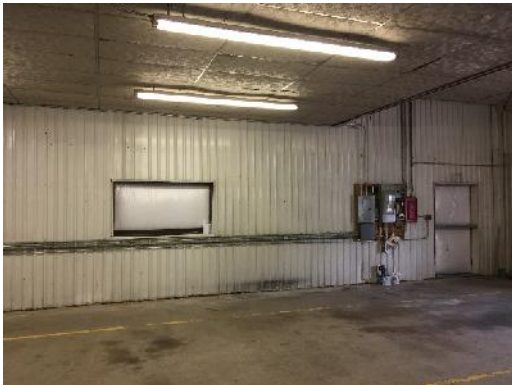
## Town of Newbold – Facilities Analysis Study Report



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## Town of Newbold – Facilities Analysis Study Report



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## Town of Newbold – Facilities Analysis Study Report

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### **Proposed Envelope Improvement – If the facility is to remain as is**

**Roof:** Remove the existing rubber roof membrane, all purlin insulation, turbine vents and patch existing deck, interior suspended ceiling tiles and vapor barrier. Spray a minimum of 6" high density foam insulation between purlins and a 2" minimum around the purlins. Apply fire retardant to the exposed foam. Providing a new hot unvented roof to exceed the current energy code per cold climate zone 7. Re-roof with 90-mil fully adhered single ply membrane roof.

**External Walls:** Remove all interior finishes, cap side wall vents, remove wall cavity insulation. Spray a minimum of 3" high density foam to the back side of the metal wall panel and girts. Apply new interior 5/8" gypsum board, tape, finish and paint.

Excavate an area around the existing basement foundation wall on the three exterior walls exposing the existing block wall. Clean wall and prep for the new waterproofing, install new exterior foundation insulation with exterior drainage membrane along the outside of the insulation. Install new sidewalk.

**Openings:** Replace vinyl windows with exterior aluminum clad wood slide by windows. Reseal all exterior joints at perimeter of windows and doors. Replace all material transition sealant joints, repair any exterior gypsum wall panels and repaint. Repaint hollow metal door frames. Replace all non-compliant hardware.

### **Proposed Interior Improvements**

**Interior Partition Walls:** Repaint all interior walls and install all new vinyl base trim.

**Ceilings:** Install new open cell suspended acoustical ceiling tiles.

**Flooring:** Remove all flooring materials and replace with new materials. Survey the existing floor elevations, level floors with thin set concrete where applicable. Site clear ceramic floor and wall tiles and install new wall and floor tiles.

**Wood Doors/Trim:** Repair wood door jambs and re-stain, provide new wood trim at interior and exterior of all rooms, and install new wood doors and hardware. Paint hollow metal door frames and panels. Site clear all wood casework in the kitchen and replace with new.





## Town of Newbold – Facilities Analysis Study Report

### 3.3 Architectural Observation

September 19, 2019, inspections were conducted at the former Newbold Elementary School building that is currently being used as a private residence located on Apperson Drive in the Town of Newbold, relative to the existing architectural conditions of the buildings, to identify code compliance, and ADA accessibility non-compliance.

### 3.4 Facility Evaluation – Former Elementary School Building

The building originally functioned as an elementary school until 2006. In 2007 the Hoban Family Trust purchased the building to be repurposed as a single-family residence.

The building was originally constructed in 1940's and underwent two additions, one in the early 60's and one in 1967. The building received an upgrade in 1997 to the plumbing, HVAC, electrical systems and new aluminum insulated glass window units.

The building consisted of a computer classroom, Library collections area, 7 Classrooms, Boys and Girls Toilet Rooms, Kitchen, Office, Mechanical and Gymnasium with mezzanine, support Toilet and Shower rooms. The building is a total of 17,217 s.f.



West Elevation



Partial North West Elevation

#### Existing Envelope Systems

**Roof:** Roof framing consists of wood beams, steel joists and glulam beams, supporting roof decking. Beams are supported by masonry pilasters on the exterior and interior block walls. The original roof insulation was a 1" fesco board over 1" wood decking. The roof insulation is currently installed over the existing roof decking. It is assumed that the roof has a minimum of 4" of addition roof insulation added based on the depth of the exterior fascia trim. The entire roof is a single ply membrane roof with metal edge coping.

**External Walls:** Masonry single wythe block walls with exterior brick and stone veneer. The 67 addition was noted to have Zonolite insulation (asbestos identified material) within the masonry cavities. It is assumed that the 1960 addition also has insulation in the block wall cavity. No known information on the original building, it is assumed that there is no exterior wall insulation. Painted interior and exterior walls, masonry reinforced concrete block pilasters.

**Openings:** Aluminum window units, fixed and operable awning windows with insulated glass installed in 1997. Exterior hollow metal door frames and insulated hollow metal service door panels. Interior wood frames and solid core doors.

**Internal Partitions:** Concrete painted block walls. Gymnasium walls have 2" interior furring, insulation in cavity and painted wall finish over all exterior walls. Some 2x4 wood stud walls with gypsum board to divide space.

**Slab / Foundation:** 4" concrete slab on grade, masonry foundation wall over concrete footing 4'-0" below grade.



## Town of Newbold – Facilities Analysis Study Report



Partial North East Elevation



East Elevation



Partial South East Elevation

### Existing Interior Systems

**Ceilings:** 12"x12" glue applied acoustical ceiling tile and plaster ceilings at the toilet rooms in the original building. Exposed roof deck fiber material with exposed roof joist in the 1960's addition. Exposed wood roof decking in the 1967 addition.

**Flooring:** 12"x12' vinyl floor tile (mastic is an asbestos identified material) Carpet over vinyl tile in select classrooms, office and corridor. Concrete block walls. Ceramic tile in classroom area toilet rooms and epoxy coating in the gymnasium toilet and shower areas.

**Base trim:** Vinyl base trim at classrooms, 1" wood base trim at corridor wrapped with vinyl base and ceramic tile case at all toilet and gymnasium support areas.

**Wood Doors/Trim:** All interior doors are wood frame, solid core wood doors with single panel vision glass. Interior and exterior wood trim at perimeter of the door frame. Wood built in classroom lockers, painted and stained. Chalkboards and white boards within classrooms.

**Toilet Rooms:** The interior layout of the original toilet rooms has been converted by the current owner to single user toilet rooms.

### Existing Conditions – Original Structure

The building is in good to fair condition and structurally sound with minor exterior wall cracks and water infiltration. (Photo A, B) The current structural roof system appears adequate. The current IBC 2015 Snow Load is 42 psf plus dead load, (borderline OK), the IBC code is not retroactive, and as such, the roof is considered fully functional and compliant with current code. No damage was observed in the roof that would indicate historical over loading or a current hazard to occupants, so it can be left "as is". (Photo C, D) The gymnasium exposed glulam beams on the exterior are deteriorating due to the exterior environment, the exterior sections of the beams are in poor condition. (Photo E, F)

The roof membrane is in fair-poor condition, the owner noted that he patches the roof when leaks appear. Based on the exterior fascia trim the roof has additional rigid insulation added, exact amount is unknown. The roof should have core samples taken to determine the exact roofing materials and insulation depth. (Photo G, H, J)

Exterior service doors are in good shape. (Photo K) Window units are in good condition. (Photo L, M)

The exterior building wall is functionally "tight" with no structural defects observed, the exterior wall has several areas on the exterior stained black by mold. This indicates water/moisture being trapped in the air space of the brick, unable to get out. Water may be entering the wall at the roof soffit, or window flashing, allowing water or condensation to remain inside the wall. There was no mold viewed on the interior, so the interior block backup appears to be intact. (Photo I, N, O, P) Exterior wood soffit and window head trim is in fair condition, soffit area to be repaired at water intrusion areas. All exterior control joints and sealant has failed.



## Town of Newbold – Facilities Analysis Study Report



Partial South West Elevation

Interior 12x12 glue applied tiles are in fair condition, the tiles are stained from roof leaks and show signs of sagging. (Photo Q, R) All interior carpet and vinyl tile is in poor condition. The vinyl tile and mastic (defined asbestos material) must be abated prior to any construction. (Photo S, T) Ceramic tile floor is in fair condition. Ceramic wall tile is in poor condition due to the alterations from the original design into a private residence. Wood doors, frames and trim are in fair condition, with scratches and veneer delamination. (Photo U, W, V) All interior concrete block walls are in good condition. Interior toilet room partitions are in poor condition as should be reconfigured. (Photo X-AA)





## Town of Newbold – Facilities Analysis Study Report



A



B



C



D



E



F



## Town of Newbold – Facilities Analysis Study Report



G



H



I



J



K



L



M



N





## Town of Newbold – Facilities Analysis Study Report



O



P



Q



R



S



T



## Town of Newbold – Facilities Analysis Study Report



U



V



W



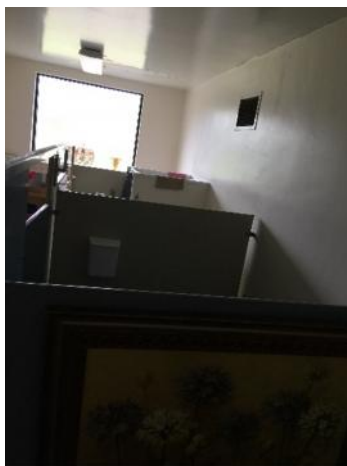
X



Y



Z



AA



## Town of Newbold – Facilities Analysis Study Report

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### **Proposed Envelope Improvements – Based on final accepted study proposed option**

**Roof:** Replace the existing roof, insulation and fascia. Repair all wood soffits. Review all flashings for any potential installation issues. Cut back the exposed rotted glulam beams at the gymnasium and clad the exposed glulams.

**External Walls:** Tuck point all exterior and interior cracked walls, cut new control joint in the first two west classrooms, remove all wood window boxes and repair any damaged brick. Reseal all control joints and material transitions with new sealants. Clean the existing brick to be free of mold. Install new weep holes in the existing exterior walls.

**Openings:** Reseal all exterior joints at perimeter of windows and doors. Repaint hollow metal door and door frames. Replace all non-compliant hardware.

### **Proposed Interior Improvements – Based on final accepted study proposed option**

**Interior Partition Walls:** Tuck point all interior cracked walls, repaint all interior walls, and install all new vinyl base trim. Site clear the wall finish in the gymnasium area, verify exterior wall condition to eliminate any concern of moisture infiltration. Install continuous insulation and skin the wall with abuse resistant gypsum wall board, install sound deadening wall finish.

**Ceilings:** Remove 12"x12" glue applied acoustical ceiling tile, install new gypsum board taped, finished, and painted. Patch to match all existing plaster ceilings at the toilet rooms and repaint.

**Flooring:** Abate all carpet, 12"x12' vinyl floor tile and mastic throughout the facility. Prep floors for new flooring throughout all areas. Site clear ceramic floor and wall tiles and install new wall and floor tiles.

**Wood Doors/Trim:** Repair wood door jambs and re-stain, provide new wood trim at interior and exterior of all rooms, and install new wood doors and hardware. Paint hollow metal door frames. Site clear all wood lockers, coat racks and case work in the classrooms and kitchen.

**Toilet Rooms:** Provide new toilet partition per new layout.





## Town of Newbold – Facilities Analysis Study Report

### 4.0 Structural Observation and Recommendation

On September 19, 2019, Dave Kampe, PE of ddk Engineering observed the former Newbold Elementary School located in the Town of Newbold, WI. The building is a single story, slab on grade building with masonry/brick walls. Roof framing consists of wood beams, steel joists and glulam beams, supporting roof decking. Beams are supported by masonry pilasters on the exterior and interior block walls.

#### Exterior

The overall condition of the building is good. No significant masonry or brick/cracking was observed on the exterior of the building. The building is functionally “tight” with no structural defects observed on the exterior. Some deterioration of the roof soffit was observed, but this is considered minor and can be easily repaired as needed. The chimney brick appears in good condition.

Several areas on the exterior are stained black by mold. This is not a structural problem but indicates water/moisture being trapped in the air space of the brick, unable to get out. Water may be entering the wall at the roof soffit, or window flashing, allowing water or condensation to remain inside the wall. There was no mold viewed on the interior, so the interior block backup appears to be intact. (no water infiltration into block). Although out of scope (structurally) this may be remedied by drilling weep holes at the bottom of the wall to allow water drainage out of the wall, and then sandblasting to clean the wall.

In addition, window and soffit flashing above the staining should be inspected for openings that allow water to enter the wall. These entry points should be sealed.

#### Interior

Minor cracking of the masonry was observed in the boys locker room. This cracking is considered non-structural and incidental to a “newer” wall placed perpendicular to the existing wall. No other cracking in the building was observed. Tuckpointing the masonry will remedy this issue.

#### Structural Capacity of the Roof

The building roof framing consists of 3 different framing types, consistent with the original building, and two additions. Original design loads for the roof system were not found on the existing building plans onsite.

The “original” building (mechanical room to front) consists of “(3) 2x12” beams, spaced 12’ oc, spanning 25’. Wood tongue and groove deck spans 12’ between beams. The beams are covered by finished 1x wood planks, and inaccessible to view. Beam size is listed as “3x12 beams” on the construction documents onsite. These beams (if wood) are grossly inadequate to support roof loads. It is likely that the beams are 3x12 steel “junior” beams that were available at the time of construction. Since the beams are not exposed, (wrapped with 1x wood) these beams need to be uncovered to verify actual construction and capacity.

The first addition is in the middle of the building consisting of SJ146 steel bar joists spaced 5’ oc, spanning 25’. Metal deck spans 5’. This roof system has a capacity of approximately 42 psf.

The rear of the building, and the gymnasium consist of 7”x39” glulam beams spaced at 13’-8”, spanning 70’. Wood tongue and groove deck spans 13’-8” between beams. This roof system has a capacity of approximately 42 psf.

The current roof system appears adequate, and in good condition. Although the current IBC 2015 Snow Load is 42 psf plus dead load, (borderline OK), the IBC code is not retroactive, and as such, the roof is considered fully functional and compliant with current code. No damage was observed in the roof that would indicate historical over loading or a current hazard to occupants, so it can be left “as is”.

Please refer to the attached pictures for further clarification of items discussed above.



## Town of Newbold – Facilities Analysis Study Report

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### **Recommendations**

- 1) Install weep holes at base of brick walls at “stain points” to provide internal drainage.
- 2) Seal windows/soffits at wall to prevent water entry into walls.
- 3) Investigate size of “3x12” beams at front of building to confirm capacity



Typical staining at base of wall



Soffit repair



## Town of Newbold – Facilities Analysis Study Report

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Covered beams at front of building



Cracking in boys locker room



## Town of Newbold – Facilities Analysis Study Report

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## Town of Newbold – Facilities Analysis Study Report

### 5.0 Mechanical Observations and Recommendations

On October 3, 2019, observations were conducted at the Town of Newbold Shop, located in Mc Naughton on River Road and the Town Hall located off of Hwy 47, relative to the existing mechanical conditions of the buildings, to identify code compliance, mechanical system deficiencies and /or maintenance items that need to be addressed.

This building review was limited in nature. Please see the following for analysis and information that is not included in this review:

- ) Heating/cooling load calculations and verification of system capacities (heating, cooling and ventilation) to meet code requirements and building loads.
- ) Current exhaust / ventilation airflows were not measured or verified to meet code requirements and building loads.
- ) Detailed / specific evaluation of heating, cooling and ventilation equipment condition. This should be completed by a qualified HVAC technician/contractor.
- ) Investigation on the condition of below ground, in-wall or above ceiling piping or ductwork, including the interior condition of piping or ductwork. This should be performed by a qualified plumbing technician.
- ) This review does not guarantee the condition or remaining useful life of any equipment.

### 5.1 Town Shop – Mechanical Review

#### Existing Systems Description

##### **General Building Usage and Description**

The building divided into two parts:

##### Original Building

The original building is used for servicing and storing of vehicles.

The original building includes an open office with multiple functions. Additionally, there is two small toilet rooms, one is also the emergency eye wash station and corridor access to the office.

##### Building Addition

The building addition (located behind the original building) is primarily used for vehicle storage.

##### **Building Heating**

##### Original Building

The original building garage space is heated by a combination of propane gas fired infrared heaters (2 total).

The office space is heated by a propane gas fired furnace hung within the shop area. The heating ducts penetrate the adjacent wall high and supply the large multifunction area. There is one return air duct low on the same wall.

The toilet room are heated by electric surface mounted heaters for space heating.

##### Building Addition

The building addition is heated by a propane gas fired infrared heater.

##### **Building Cooling**

There is no cooling in the facility.

##### **Building Ventilation System**

##### Repair and Storage Areas



## Town of Newbold – Facilities Analysis Study Report

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### Exhaust

This space includes a general exhaust fans that exhaust general building air. There is a small exhaust fan that captures fumes from the vehicles located in the addition, the duct has been removed from the wall.

### Supply / Make-Up Air

There is a ceiling mounted direct fired building make-up air unit installed in the shop area and an adjacent duct into the addition.

### Destratification Fan

There is one destratification fan located near the center of the shop and one in the addition.

### Administrative /Support Area

#### Ventilation

Outside air is ducted directly to the furnace (serving the administrative area).

### Temperature Controls

Building infrared and unit heaters are controlled by stand-alone analog style thermostats.

Building make-up air system are also controlled by stand-alone controls.

There is a portable plug in style carbon monoxide detector located in the shop for carbon monoxide sensing.

### Plumbing

#### Domestic Hot Water Heating

The building includes a natural gas point of use tank style hot water heaters in the interior toilet room that serves both toilet rooms.

There is a hot water pressure washer located in the addition but not hooked up.

The shop area has one 4" floor drain directly plumbed to a tank adjacent to the building on the west side.

### Evaluation and Recommendations - Mechanical

#### Building Heating

The infrared unit heaters were not tested for operation to verify condition but appear to be in fair working order. The existing furnace appears to be near the end of its useful life. Replacement/repair of units can be expected over the upcoming years.

We recommend having a qualified HVAC contractor / technician assess the internal condition of heating appliances in this space.

#### Controls

The existing exhaust fan should be modified to be controlled via gas detection sensing system. The gas detection system should include both carbon monoxide and nitrogen dioxide sensors.

#### Building Ventilation System

If the building is over 850 SF and used for storage of 5 or more vehicles, the building is required to be mechanically ventilated (Per Comm 64 of the Wisconsin Enrolled



## Town of Newbold – Facilities Analysis Study Report

Commercial Building Code, Table 64.0403). If the building usage and size meet these criteria, a suitable exhaust and ventilation (make-up air) system will need to be installed.

By code, the ventilation system needs to operate a minimum of 5 hours per day or when automatically energized by the gas detection system. As indicted above, the exhaust fan and intake system controls should be updated.

Additionally, depending on desired space temperature and future building use, a direct fired natural gas make-up air unit could be installed to preheat the incoming ventilation air (currently it is not heated).

### Plumbing

#### Domestic Hot Water Heating

The existing domestic hot water heaters appear to be in good operating condition. The units appear to be at the end of their life cycle.

#### Sanitary Service

The existing septic system is at the end of its life cycle.

#### Floor Drains

The facility only has one internal floor drain within the shop; the addition does not have any floor drains. The floor drainage system is inadequate.

#### Fixtures

The existing fixtures appear to be in operating condition. The fixtures are not compliant with the current ADA requirements and should be replaced.

## 5.2 Town Hall – Mechanical Review

### Existing Systems Description

#### **General Building Usage and Description**

The building divided into two parts:

##### Original Building – Town Hall

The original building is used as a town hall, storage and community building.

The original building includes an open community space that is rentable, used for voting and operates as the official town board room, warming kitchen with open serving counter doubling as a workspace, office, men's and women's toilet rooms, voting storage, and new entry vestibule.

##### Building Addition

The building addition was designed as the town fire station and is now used as a large open activity area.

#### **Building Heating**

##### Original Building

The original building hall space is heated by a natural gas fired furnace.

##### Building Addition

The building addition is heated by a natural gas fired furnace.



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<b>Building Cooling</b>	There is no cooling in the facility.
<b>Building Ventilation System</b>	<p><b>Exhaust</b> There are exhaust fans in each toilet room space. There is an exhaust fan in the board room that is not run because it is loud. The kitchen has a direct vent range hood.</p> <p><b>Ventilation</b> The hall furnace damper control has been disabled. Outside air is ducted directly to the furnace in the existing fire department area.</p>
<b>Temperature Controls</b>	Building furnaces are controlled by stand-alone analog style thermostats.
<b>Plumbing</b>	<p><u>Domestic Hot Water Heating</u> The building includes a natural gas tank style hot water heater located in the basement of the town hall.</p> <p>The existing fire department area existing floor catch basin has been abandoned in place.</p>

### Evaluation and Recommendations - Mechanical

<b>Building Heating</b>	Install a new natural gas fired furnace with exhaust system. Add an energy recovery ventilation (ERV) in the return air duct. The existing furnace appears to be near the end of its useful life. The make-up air damper has been disconnected.
<b>Controls</b>	Provide a commercial thermostat that has an occupied and unoccupied mode switch. The existing exhaust fan should be replaced in the toilet room and kitchen, they appear to be near the end of its useful life.
<b>Plumbing</b>	<p><u>Domestic Hot Water Heating</u> The existing domestic hot water heaters appear to be in good operating condition. The units appear to be near the end of their life cycle.</p> <p><u>Sanitary Service</u> The existing septic system appear to be near the end of their life cycle based on the age of the system.</p> <p><u>Floor Drains</u> Remove the existing catch basin floor drain and cap all piping.</p> <p><u>Fixtures</u> The existing fixtures appear to be in operating condition. The fixtures are not compliant with the current ADA requirements and should be replaced.</p>





## Town of Newbold – Facilities Analysis Study Report

### **5.3 Former Elementary School – Mechanical Review**

On September 9, 2019, observations were conducted by Dennis Kramm D.E.S. of Kramm Mechanical Design, LLC at the previous Newbold Elementary School House at 4630 Apperson Drive in the Town of Newbold, to determine the existing mechanical conditions of the building and repurposing a change of use as a town hall and community building.

Currently the building is only being occupied during the summer months and is closed for winter months. The owner has removed the natural gas meter.

#### Facility Evaluation

- ) Existing steam heating system is not in operation. The boiler piping would need to be reworked and attached to existing steam boiler, boiler condensate pumps and boiler feed pumps would have to be piped to boiler. The existing condensate piping comes from under the floor, not sure of condition of piping. Would have to check out condition of existing unit ventilators and air handling units to determine if they are operable, and the existing control system would need to be replaced. Complete system would need to be pressure checked for leaks. This is an older system and does not provide any air conditioning needs.

#### Recommendations

- ) Replacing the existing steam heating system with Bard style wall mount self- contained natural gas heating-electric cooling units. The unit would mount on the exterior of the building and service each classroom area (10) with separate unit or units as required to meet code standards. These units would have built-in economizer damper packages that provide ventilation air requirements to meet state codes and provide free cooling when conditions are favorable. Each unit is controlled by separate programmable thermostats which would provide separate controls for each area for energy savings.
- ) The gym area would be serviced by (2) natural gas fired high efficient furnaces and condensing units with exposed spiral duct hung from ceiling to provide heating-cooling and ventilation requirements to meet code.
- ) The corridor and office areas would utilize high efficient furnaces and condensing units to provide heating-air conditioning and ventilation to these areas.
- ) Electric wall heaters for the vestibules and bathrooms

### **5.4 Former Elementary School – Plumbing Review**

On September 10, 2019, observations were conducted by Dale Schlieve of CEC, LLC at the previous Newbold Elementary School House at 4630 Apperson Drive in the Town of Newbold, in order to determine the existing plumbing related conditions of the building and repurposing a change of use as a town hall and community building.

Currently the building is only being occupied during the summer months and is closed for winter months. The owner drains the system during the winter shutdown. The existing well is in proper working order currently.

#### Facility Evaluation – Girls Main Toilet Room

- ) The lavatories and water closet are not ADA compliant. A shower was installed in the place where a water closet was removed. The fixtures are in good condition. The toilet partitions were modified

#### Recommendations



## Town of Newbold – Facilities Analysis Study Report

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- ) Remove all plumbing fixtures and toilet partitions. Replace with ADA compliant fixtures and partitions, Eliminate the shower and replace with a water closet in that space.

### Facility Evaluation – Boys Main Toilet Room

- ) The lavatories and water closet are not ADA compliant. A shower was installed in the place where a water closet was removed. The toilet partitions were modified. Urinals are in good condition and are ADA compliant.

### Recommendations

- ) Remove all plumbing fixtures and toilet partitions. Replace with ADA compliant fixtures and partitions, Eliminate the shower and replace with a water closet in that space. Urinals to remain in place.

### Facility Evaluation – Kitchen

- ) There is a 2-compartment sink with a gooseneck faucet and spray. This medium quality sink and faucet is in good condition.

### Recommendations

- ) Until the need for an updated kitchen is required this sink should remain in place.
- ) If the kitchen is updated an exterior grease interceptor would be required by code.
- ) Based on the extent of an updated the kitchen, additional sinks may be required.

### Facility Evaluation – Classroom

- ) A classroom sink was removed and capped.

### Recommendations

- ) Verify the functionality of the room to determine any plumbing needs.

### Facility Evaluation – Plumbing Chase

- ) The chase is accessed thru the boys toilet room. A free-standing shower was installed in the chase. The plumbing appears to be in good condition.

### Recommendations

- ) Remove shower in chase.
- ) Test piping and replace any faulty and outdated piping.

### Facility Evaluation – Mechanical Room

- ) A service sink, washing machine, electric water heater with mixing valve, pressure tank and water conditioner are the fixtures and appurtenances in this room.
- ) The tunnel is accessed from the mechanical room. Water and drain piping are in the tunnel. Majority of the water pipe is accessible from the tunnel and chase. Per owner the water pipe is uninsulated and copper. There are occasional leaks from lack of proper drainage during winter shutdown.
- ) The domestic water supply to the boiler has a proper backflow preventor.



## Town of Newbold – Facilities Analysis Study Report

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### Recommendations

- ) This area would just need a good clean up. Remove and cap any unused piping.
- ) Test tunnel piping for leaks and update if necessary.
- ) Insulate water piping especially the hot water piping.
- ) Test the backflow preventor to boiler if reused.

### Facility Evaluation – Gymnasium Support Area

- ) Drinking fountains have been removed and capped.
- ) South locker and toilet rooms: existing water closet, lavatory and shower have not been used since the present owners used this area.

### Recommendations

- ) Install a new ADA accessible drinking fountain.
- ) Test piping and fixtures for future use.

### Facility Evaluation – Septic System

- ) There is no record of this system at the Oneida County zoning office. We are assuming it was sized properly for 150+ students and employees. The septic tank has been inspected on a regular basis per county regulations.

### Recommendations

- ) Have system inspected including a soil boring adjacent to drain field. Estimate size of system to determine its capabilities. If a kitchen is added a grease interceptor would be required.



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## Town of Newbold – Facilities Analysis Study Report

### 6.0 Electrical Observations and Recommendations

On October 3, 2019, observations were conducted at the Town of Newbold Shop, located in Mc Naughton on River Road and the Town Hall located off of Hwy 47, to determine the existing mechanical conditions of the building, to identify code compliance, electrical system deficiencies and /or maintenance items that needs to be addressed.

This building review was limited in nature. Please see the following for analysis and information that is not included in this review:

- ) Verification of existing electrical system capacities to handle current or future loads.
- ) Detailed / specific evaluation of existing electrical equipment condition. This should be completed by a qualified electrical contractor.
- ) Investigation on the condition of existing below ground, in-wall or above ceiling electrical conduit or wiring.

### 6.1 Town Shop – Electrical Review

#### Existing Systems Description

##### **General Building Usage and Description**

The building divided into two parts:

##### Original Building

The original building is used for servicing and storing of vehicles.

The original building includes an open office with multiple functions. Additionally, there is two small toilet rooms, one is also the emergency eye wash station and corridor access to the office.

##### Building Addition

The building addition (located behind the original building) is primarily used for vehicle storage.

##### **Electric Utility Service**

This facility has a Single-Phase, 200-Amp Utility service.

##### **Normal Power Distribution**

There is a main panel service with multiple sub panels fed from the main panel facility. There is a power source for a manual backup generator in the shop area. The main panel appears to be in working order and grounded properly. Each subpanel also appears to be in working order and grounded properly. The addition has an additional electrical distribution arrangement, fed from the main panel, each subpanel appears to be in working order and grounded properly.

##### **Emergency Power Distribution**

The shop is equipped with manual transfer switch for a portable generator.

##### **Fire Alarm**

There does not appear to be any fire alarm system in this facility.

##### **Lighting**

The existing interior lighting in the facility consists of fluorescent industrials, high bays high pressure sodium lights, and incandescent lamp holders. All interior lighting is controlled locally by manual switches.



## Town of Newbold – Facilities Analysis Study Report

	The existing exterior lighting on the facility consists of wall mounted wall packs. All the lighting is in fair condition.
<b>Devices &amp; Equipment</b>	All receptacles appear to be in good working order. All areas lack adequate power supply per the function of the building.
<b>Connections</b>	
<b>Telecommunications</b>	There appears to be telephone and data services to the facility.
<b>Security Systems</b>	There does not appear to be any security systems in this facility.

### Evaluation and Recommendation

<b>General Building Usage and Description</b>	<p>The main panel and some sub panels appear to be outdated and obtaining breakers for these panels is problematic. These panels should be replaced. The main panel buss appears to already have been tapped to feed the adjacent panel. Additional power outlet may be needed for additional equipment and ease of working conditions.</p> <p>Code required working clearance should be maintained for all electrical panels.</p> <p>Any/all existing light fixtures should be replaced with LED alternatives. Occupancy sensor(s) would be recommended for lighting control, wherever possible, to ensure that the lighting is not on when the building or individual rooms are vacant.</p> <p>Any exit signs in the facility that are not functioning should be addressed promptly.</p>
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### 6.2 Town Hall – Electrical Review

#### Existing Systems Description

<b>General Building Usage and Description</b>	<p>The building divided into two parts:</p> <p><u>Original Building – Town Hall</u> The original building is used as a town hall, storage and community building.</p> <p>The original building includes an open community space that is rentable, used for voting and operates as the official town board room, warming kitchen with open serving counter doubling as a workspace, office, men's and women's toilet rooms, voting storage, and new entry vestibule.</p> <p><u>Building Addition</u> The building addition was designed as the town fire station and is now used as a large open activity area.</p>
<b>Electric Utility Service</b>	This facility has a Single-Phase, 200-Amp Utility service. The service feed from the new adjacent fire department



## Town of Newbold – Facilities Analysis Study Report

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### **Normal Power Distribution**

There are 2) 100-Amp main panels with multiple sub panels fed from the main panel.

The main panels appear to be in working order and grounded properly. Each subpanel also appears to be in working order and grounded properly.

### **Emergency Power Distribution**

The entire building is equipped to operate with the fire department direct feed generator.

### **Fire Alarm**

There does not appear to be any fire alarm system in this facility.

### **Lighting**

The existing interior lighting in the facility consists of fluorescent lights, incandescent lamp holders and fluorescent light fixtures retrofitted to LED bulbs. The client noted that the fixtures are lacking a ground wire. The hall interior lighting is controlled by exercising the electrical panel box breaker in the corridor. The previous fire department is controlled locally by manual switches.

The existing exterior lighting on the facility consists of wall mounted LED wall packs. There is one yard light at the northwest exit.

### **Devices & Equipment Connections**

All receptacles appear to be in good working order. All areas lack adequate power supply per the function of the building.

### **Telecommunications**

There appears to be telephone and data services to the facility. Everything is currently run free air.

### **Security Systems**

There does not appear to be any security systems in this facility.

## **Evaluation and Recommendation**

### **General Building Usage and Description**

The main panel and sub panels are outdated and obtaining breakers for these panels is problematic. These panels should be replaced. The main panel buss appears to already have been tapped to feed the adjacent panel. Additional power outlet may be needed for additional equipment and ease of working conditions.

The hall interior lighting should be re wired for individual room switching control.

Code required working clearance should be maintained for all electrical panels.

All existing light fixtures should be replaced with LED alternatives. Occupancy sensor(s) would be recommended for lighting control, wherever



## Town of Newbold – Facilities Analysis Study Report

possible, to ensure that the lighting is not on when the building or individual rooms are vacant.

Any exit signs in the facility that are not functioning should be addressed promptly.

### **6.3 Former Elementary School – Electrical Review**

September 9, 2019, an electrical observation was conducted by Ron Janikowski D.E.S. of Badger State Consulting at the previous Newbold Elementary School House at 4630 Apperson Drive in the Town of Newbold, relative to the existing mechanical conditions of the buildings and repurposing a change of use as a town hall and community building.

#### **Existing Systems Description**

##### **General Building Usage and Description**

The building was originally designed as an elementary school

##### **Electric Utility Service**

The building is fed with an old 400-amp single phase O/H service. Metering is done thru a current transformers (CT's) at the service mast, Wisconsin Public Service (WPS) would require this be updated to current standards

Electrical Codes would require a location for the main service panel as well as all other panels has Code required clearances. Current location does not meet the minimum Code requirements.

Current Codes do also require circuit breakers have sufficient Fault Current Ratings to clear any faults. Arc-Flash labels field installed must be installed for inspector review.

If this building would be remodeled for a community center the HVAC system if new would most likely require a 3-phase electrical system.

In typical school wiring feeder panels are installed throughout the building.

The main distribution panel is not original but is in good shape.

Most other panels are aged and would be replaced or removed as replacement circuit breakers are not available and would not meet current Codes.

Feeder distribution wiring from the main distribution panel (MDP) to each feeder or sub-panel is completed with metal conduit, metal pull boxes and wireway with old 60-degree wire. No equipment ground conductor was included. Branch circuit equipment grounding is completed using the metal raceway.

##### **Branch Circuit Wiring**

Branch circuit wiring is wired with conduit and wire typical for the block building. I did notice a lot of branch circuit extensions was installed using surface wire mold raceway, boxes and fittings. This was done in areas where there were insufficient receptacle outlets.

Since this building was built many new electrical Codes now require many areas where Ground Fault Circuit Interrupters (GFCI) are required.

No dropped or suspended ceiling is present in the corridors, so all conduits are exposed. Conduit wiring from flush mount walls within the classrooms was





## Town of Newbold – Facilities Analysis Study Report

completed with conduit and boxes within the concrete blocks. Classrooms and other spaces have ceiling tiles I do not know if accessible.

### Fire Alarm

Building Codes at the time of construction did require a manual fire alarm system for the occupancy. The building has an old line voltage fire alarm system with all required pull stations at the exits and notification appliances (horn or strobe) where required.

The system is aged and does not meet the current NFPA 72 requirements for an addressable system with monitoring.

The building change of occupancy to a community center would not require the fire alarm system if the occupancy load is 300 or less.

If this building is remodeled for that occupancy the existing fire alarm system must be completely removed per Code requirements.

### Lighting - General

The existing lighting is using fluorescent lighting fixtures controlled thru multiple switches in each room. The gymnasium lighting is metal halide high bay fixtures controlled with circuit breakers.

This building lighting system would not meet current IBC building Energy Codes. Current energy Codes require many aspects: automatic shutoff controls thru sensors or time clocks, light reduction controls thru sensors or dimmers, daylight lighting controls thru sensors near windows as well as maximum installed lighting power allowances.

If this building was remodeled for the community center a completely new lighting system would be required using LED lighting and all required controls

### Lighting - Emergency

No generator or other backup systems exist.

The current building emergency lighting system is completed using EM lights on the exit lights. I did not notice egress lighting in the corridors and path of egress.

Current IBC building Codes requires a system that as a minimum provides 1 foot- candle average of light on the floor for the entire path of egress including outside at the area of discharge.

The egress path plan is required on the job site as well as the energy code calculations (Comcheck) documents for State and local Authority Having Jurisdiction (AHJ) review. This plan will also show IBC required exit lights and the installed lighting with controls.

All exterior building lighting must also comply with the IBC energy Code. Standard exterior lighting must use photocells or time clocks for dusk to dawn operation. Other sections require any facade or decorative lighting to meet Code required schedules.

### Devices & Equipment Connections

All receptacles appear to be in good working order. All areas lack adequate power supply per the function of the building.



## Town of Newbold – Facilities Analysis Study Report

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**Telecommunications**      There appears to be telephone and data services to the facility.

**Security Systems**      There does not appear to be any security systems in this facility.

### **Conclusion and Recommendation**

After review of notes and pictures taken during the inspection, I have reached out to local electrical contractors to get an idea of what it would take to bring this building up to current electrical standards as they would be required with the current International Building Code (IBC) 2015 version that is the current Code. As outlined above some of the major items that would need to be completed even though the building Occupancy Group will change to a less restrictive Code are listed here:

Update the electrical service to a 3-phase 4-wire system to accommodate an update HVAC system.

System grounding will be required to meet current Code requirements.

Remove or replace the existing dated panels and load centers that replacement parts are no longer available.

Remove the fire alarm system completely.

Replace all lighting with energy efficient lighting maybe LED that would comply with the 2015 energy Code. That would include exterior lighting.

Install lighting controls that meet the 2015 energy Code.

Install egress lighting as required by the 2015 IBC to maintain 1 foot-candle of light for the entire path of egress including exterior immediate discharge area. These egress lights will have to have emergency backup power.

The new occupancy group would not require a fire alarm system unless it is labeled for more than 300 occupants.

The building is a type I or II construction so all wiring within the building would be required to be conduit or type MC cable.

During the past years many electrical power alterations were completed some good and some very questionable. The Electrical Contractor (EC) will have to review what was done and make a professional judgement if the branch circuit or wiring meets current Codes.



## Town of Newbold – Facilities Analysis Study Report

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### **7.1 Town Shop ADA Non-Compliant Related Issues**

- ) No designation of an accessible route to the facility
- ) Lack of designated handicapped parking
- ) All exterior doors threshold height, hardware, width and maneuvering clear floor space
- ) Door hardware and maneuvering clear floor space throughout the building
- ) Toilet rooms are non-compliant
  - o Entry door is too narrow, non-accessible hardware
  - o Fixture heights, types, clearances and maneuvering clear floor space

### **7.2 Town Hall ADA Non-Compliant Related Issues**

- ) No designation of an accessible route to the facility
- ) Northwest exterior doors threshold height, hardware, width and maneuvering clear floor space, doors in series clearances
- ) Door hardware and maneuvering clear floor space throughout the building
- ) Casework height and maneuvering clear floor space throughout the building
- ) Voting booth height requirements
- ) Toilet rooms are non-compliant
  - o Entry door is too narrow, non-accessible hardware
  - o Fixture heights, types, clearances and maneuvering clear floor space

### **7.3 Former Elementary School ADA Non-Compliant Related Issues**

- ) No designation of an accessible route to the facility
- ) Door hardware and maneuvering clear floor space throughout the building
- ) Casework height and maneuvering clear floor space throughout the building
- ) Toilet rooms are non-compliant
  - o Fixture heights, types, clearances and maneuvering clear floor space



## Town of Newbold – Facilities Analysis Study Report

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## Town of Newbold – Facilities Analysis Study Report

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### **8.0 Code Review of the existing town owned facilities and the former elementary school as a community building**

Project: **Town of Newbold Facilities Study**  
Project #: 2017.017  
Project Location: Town Shop, Town Hall and Former Elementary School Facilities  
Date: 10/19  
Code Authority: State of Wisconsin

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*The following code research and list of Chapters are based on the **2015 IBC** (International Building Code) with Wisconsin Amendments.*

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#### **Future Code Considerations:**

- Review of code requirements for more than one building on a single lot; taking into account fire separation distance, allowable areas, etc.
- Fire walls may be required to allow building additions.
- Addition of building area or any major alteration could increase the occupant capacity and may require restroom upgrades or expansions.

#### **Building Code Thresholds:**

The following is in regards to the thresholds for having to bring existing buildings up to code.

- ) Repairs to existing buildings will not require making changes to any other part of the buildings.
- ) Removals and replacements or covering of existing materials, elements, equipment, or fixtures may require that up to 20 % of the construction costs go toward making the building more accessible. Any new items used must meet current code. Ex: Replacing doors and locksets.
- ) Minor alterations (less than 50% of building) to the existing buildings may require that up to 20% of the construction costs go toward making the building more accessible, not including stairways. Means of egress items within the work area are to be brought up to code. Fire protection systems may be required within the area of work. Otherwise, the building outside of the work area does not need to be changed to adhere to current codes. Any items used in the alteration must meet current code. Ex: Moving or eliminating a door opening; moving walls; removal and infill of a window.
- ) Major alterations (greater than 50% of building) to the existing buildings will require that up to 20 % of the construction costs go toward making the building more accessible, including stairways. Means of egress items within the work area as well as some means of egress items outside of the work area are to be brought up to code. Fire protection systems may be required within the area of work. Any items used in the alteration must meet current code. Ex: Reconfiguring 75% of a building's layout; complete means of egress reconfiguration.



## Town of Newbold – Facilities Analysis Study Report

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- ) Changes of building use (occupancy) and additions will require full adherence to current building codes including potential installation of elevators, fire sprinkler systems, etc.

\*Be aware that the thresholds stated above are generalizations and may be subject to requirements not mentioned. There are many items affected by the changing of an existing building. Any questions on specific situations should be directed to the Architect for a thorough code review and report to determine the exact code requirements.



## Town of Newbold – Facilities Analysis Study Report

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### **8.1 Town Shop Building**

#### Chapter 3 - Use and Occupancy Classification

- 302 Classification      Group S-1, Moderate Hazard Storage

#### Chapter 4 – Special Detailed Requirements Based on Use and Occupancy

- 406.6 Enclosed parking garages.
  - 406.4.2 Ventilation – Shall be mechanically controlled in accordance with the International Mechanical Code
- 406.8 Repair Garages.
  - 406.8.1 Mixed uses shall be allowed in the same building as a repair garage subject to the provisions of Section 508.1
  - 406.8.2 Ventilation – Shall be mechanically controlled in accordance with the International Mechanical Code

#### Chapter 5 - General Building Heights & Areas

- Building area is a total of 3,688 s.f.
  - Allowable area per Table 506.2 is 17,500 s.f. without increases for sprinklers or frontage.

#### Chapter 6 - Types of Construction

- Type 3B, Non-Combustible Exterior Walls, interior building elements are of any material permitted by the code

#### Chapter 7 - Fire-Resistance-Rated Construction

#### Chapter 8 - Interior Finishes

#### Chapter 9 - Fire Protection Systems

#### Chapter 10 – Means of Egress

- 1004 Occupant Load – Per Table 1004.1.2
  - Shop Area.
    - As Parking Garage: 3,128 s.f. / 200 s.f./person = 16 occupants
  - Office Area.
    - As Business: 560 s.f. / 100 s.f./person = 6 occupants
- 1007 Accessible Means of Egress
  - 1009.1, Exception 1: Accessible means of egress are not required in alterations to existing buildings.
- 1017 Exit Access Travel Distance (Table 1016.1)
  - Occupancy S-1: 200 ft. Not sprinklered, 250 ft. Sprinklered.

#### Chapter 11 - Accessibility

- 1103.2.7 Limited access spaces.
  - (1) Storage spaces that do not include permanent workstations, are infrequently accessed by employees, and are not open to the general public are not required to be accessible.
- 1104 Accessible Route



## Town of Newbold – Facilities Analysis Study Report

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- 1104.3 Connected Spaces. When a building or portion of a building is required to be accessible, an accessible route shall be provided to each portion of the building.
  - 1104.3.1 Employee work areas. Common use circulation paths within employee work areas shall be accessible routes.

### Chapter 29 - Plumbing Systems

- 2902.1 Minimum number of required plumbing fixtures.
  - Business
    - 1 WC per 25 for the first 50 men & women
      - ) Men:  $3/25 = .12$  WC
      - ) Women:  $3/25 = .12$  WC
    - 1 Lav per 40 for first 50 men & women
      - ) Men:  $3/40 = .075$  Lavs
      - ) Women:  $3/40 = .075$  Lavs
  - Storage
    - 1 WC per 100 for men & women
      - ) Men:  $8/100 = .08$  WC
      - ) Women:  $8/100 = .08$  WC
    - 1 Lav per 100 for men & women
      - ) Men:  $8/100 = .08$  Lav
      - ) Women:  $8/100 = .08$  Lav
  - Total required = 1 WC and 1 Lavs for Men and Women; 1 service sink and 1 drinking fountain is required.





## Town of Newbold – Facilities Analysis Study Report

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### **8.2 Town Hall Building**

#### Chapter 3 - Use and Occupancy Classification

- 302 Classification      Group B, Business  
                                    Group A2 or A3, Community Halls may apply based on the final building functions

#### Chapter 5 - General Building Heights & Areas

- Building area is a total of 6,979 s.f.
  - Allowable area per Table 506.2 is 23,000 s.f. without increases for sprinklers or frontage.

#### Chapter 6 - Types of Construction

- Type 2B, Non-Combustible Exterior Walls, interior building elements are of any material permitted by the code

#### Chapter 7 - Fire-Resistance-Rated Construction

#### Chapter 8 - Interior Finishes

#### Chapter 9 - Fire Protection Systems

#### Chapter 10 – Means of Egress

- 1004 Occupant Load – Per Table 1004.1.2
  - Storage (Basement).
    - 2,057 s.f. / 300 s.f./person = 7 occupants
  - Hall Area.
    - Business: 2,163 s.f. / 100 s.f./person = 22 occupants
  - Former Fire Department Area.
    - Assembly: 2,584 s.f. / 15 s.f./person = 173 occupants
- 1007 Accessible Means of Egress
  - 1009.1, Exception 1: Accessible means of egress are not required in alterations to existing buildings.
- 1016 Exit Access Travel Distance (Table 1016.1)
  - Occupancy S-1, B, Assembly: 200 ft. Not sprinklered, 250 ft. Sprinklered.

#### Chapter 11 - Accessibility

- 1103.2.7 Limited access spaces.
  - (1) Storage spaces that do not include permanent workstations, are infrequently accessed by employees, and are not open to the general public are not required to be accessible.
- 1104 Accessible Route
  - 1104.3 Connected Spaces. When a building or portion of a building is required to be accessible, an accessible route shall be provided to each portion of the building.
    - 1104.3.1 Employee work areas. Common use circulation paths within employee work areas shall be accessible routes.

#### Chapter 29 - Plumbing Systems

- 2902.1 Minimum number of required plumbing fixtures.



## Town of Newbold – Facilities Analysis Study Report

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- Business
  - 1 WC per 25 for the first 50 men & women
    - ) Men:  $11/25 = .44$  WC
    - ) Women:  $11/25 = .44$  WC
  - 1 Lav per 40 for first 50 men & women
    - ) Men:  $11/40 = .28$  Lavs
    - ) Women:  $11/40 = .28$  Lavs
- Assembly
  - 1 WC per 40 for men & women
    - ) Men:  $87/40 = 2.17$  WC
    - ) Women:  $87/40 = 2.17$  WC
  - 1 Lav per 75 for first 50 men & women
    - ) Men:  $87/75 = 1.16$  Lavs
    - ) Women:  $87/75 = 1.16$  Lavs
- Storage
  - 1 WC per 100 for men & women
    - ) Men:  $4/100 = .04$  WC
    - ) Women:  $4/100 = .04$  WC
  - 1 Lav per 100 for men & women
    - ) Men:  $4/100 = .04$  Lav
    - ) Women:  $4/100 = .04$  Lav
- Total required = 3 WC and 2 Lavs for Men and Women; 1 service sink and 1 drinking fountain is required.



## Town of Newbold – Facilities Analysis Study Report

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### **8.3 Former Elementary School Building**

#### Chapter 3 - Use and Occupancy Classification

- 302 Classification      Group B, Business  
   Group A2 Community Halls

#### Chapter 5 - General Building Heights & Areas

- Building area is a total of 17,228 s.f.
  - Allowable area per Table 506.2 is 19,000 s.f. without increases for sprinklers or frontage.

#### Chapter 6 - Types of Construction

- Type 3B, Non-Combustible Exterior Walls, interior building elements are of any material permitted by the code

#### Chapter 7 - Fire-Resistance-Rated Construction

#### Chapter 8 - Interior Finishes

#### Chapter 9 - Fire Protection Systems

#### Chapter 10 – Means of Egress

- 1004 Occupant Load – Per Table 1004.1.2
  - Business Area.
    - Business: 13,144 s.f. / 100 s.f./person = 132 occupants
  - Community Area.
    - Assembly: 4,084 s.f. / 15 s.f./person = 273 occupants
- 1007 Accessible Means of Egress
  - 1009.1, Exception 1: Accessible means of egress are not required in alterations to existing buildings.
- 1016 Exit Access Travel Distance (Table 1016.1)
  - Occupancy B, Assembly: 200 ft. Not sprinklered, 250 ft. Sprinklered.

#### Chapter 11 - Accessibility

- 1103.2.7 Limited access spaces.
  - (1) Storage spaces that do not include permanent workstations, are infrequently accessed by employees, and are not open to the general public are not required to be accessible.
- 1104 Accessible Route
  - 1104.3 Connected Spaces. When a building or portion of a building is required to be accessible, an accessible route shall be provided to each portion of the building.
    - 1104.3.1 Employee work areas. Common use circulation paths within employee work areas shall be accessible routes.

#### Chapter 29 - Plumbing Systems

- 2902.1 Minimum number of required plumbing fixtures.
  - Business
    - 1 WC per 25 for the first 50 men & women  
   ) Men: 66/25 = 2.64 WC



## Town of Newbold – Facilities Analysis Study Report

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- ) Women:  $66/25 = 2.64$  WC
  - 1 Lav per 40 for first 50 men & women
    - ) Men:  $66/40 = 1.65$  Lavs
    - ) Women:  $66/40 = 1.65$  Lavs
- Assembly
  - 1 WC per 40 for men & women
    - ) Men:  $137/40 = 3.43$  WC
    - ) Women:  $137/40 = 3.43$  WC
  - 1 Lav per 75 for first 50 men & women
    - ) Men:  $137/75 = 1.86$  Lavs
    - ) Women:  $137/75 = 1.86$  Lavs
- Total required = 6 WC and 4 Lavs for Men and Women; 1 service sink and 1 drinking fountain is required.





## Town of Newbold – Facilities Analysis Study Report

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### 9.0 Facility Plan Options

The final options recommendation was delivered on January 22, 2020 during the board meeting presentation.

Funktion Design Studio, LLC presented to the Building Committee the final revisions to the proposed final facility options for the Town Shop, Town Hall at the existing Site and the Town Hall in the former elementary school.

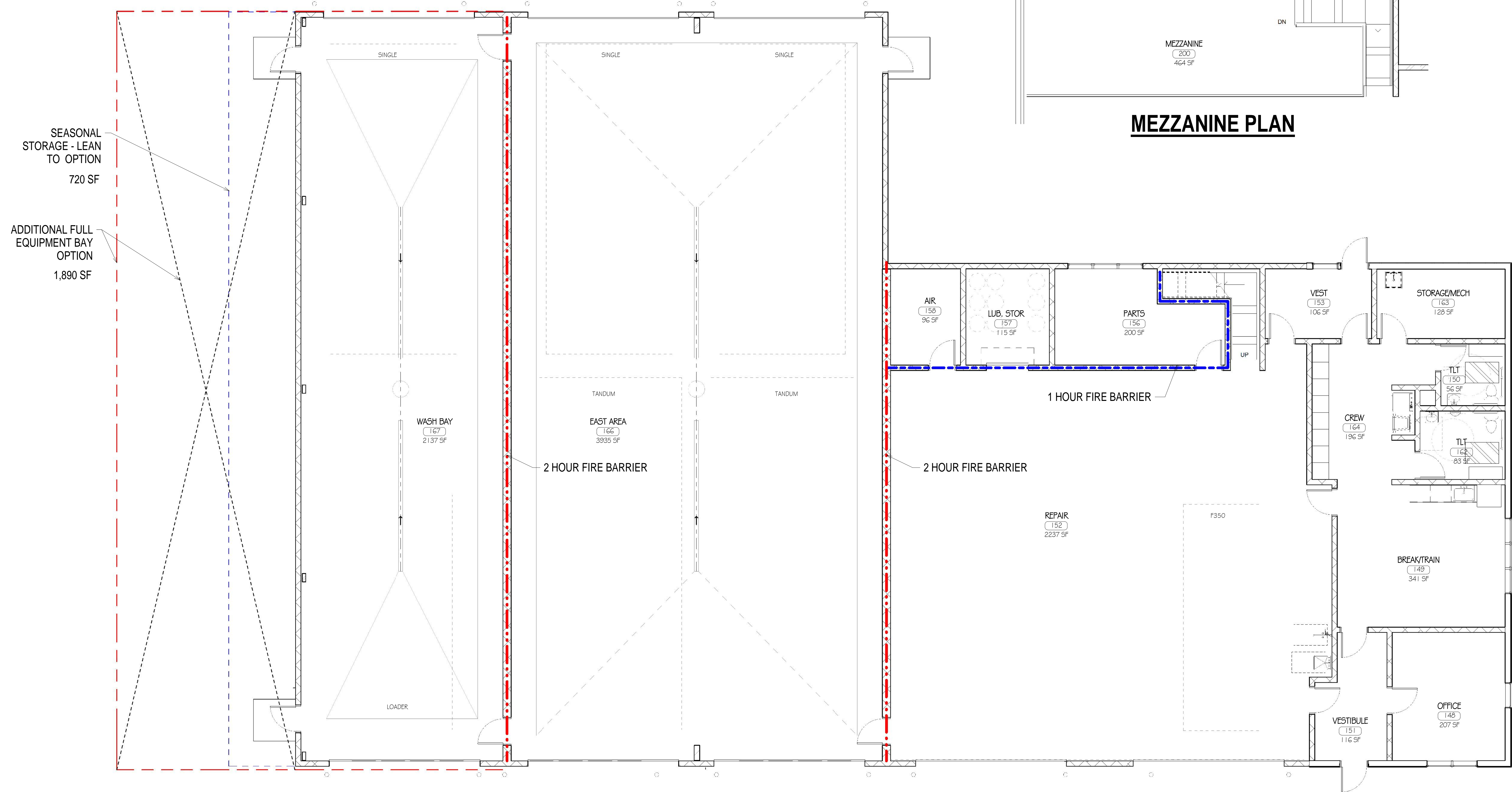


## Town of Newbold – Facilities Analysis Study Report

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TOWN OF NEWBOLD - FACILITY ANALYSIS STUDY  
PROPOSED TOWN SHOP

1/22/20



**MEZZANINE PLAN**

**FLOOR PLAN**

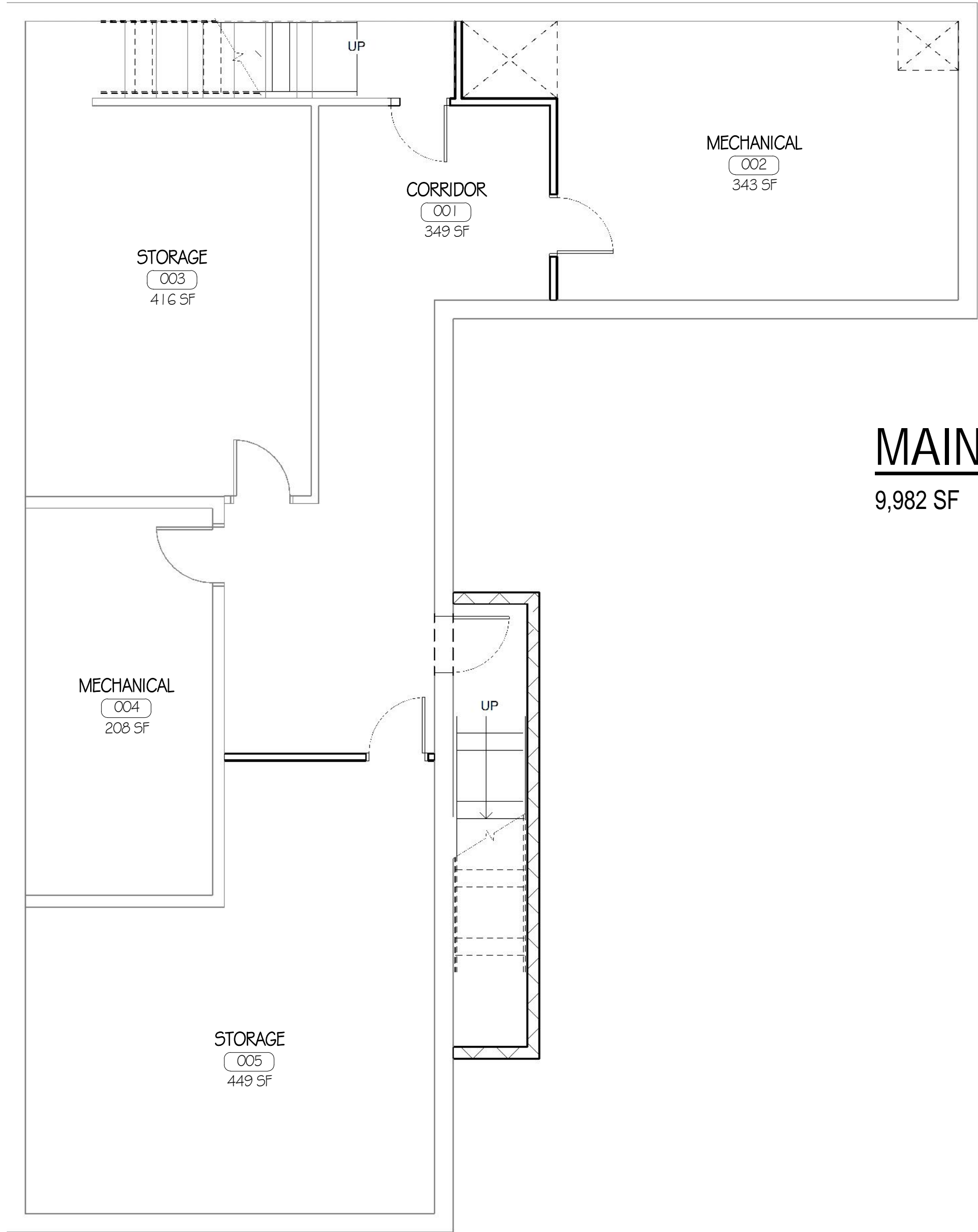
11,294 SF



TOWN OF NEWBOLD - FACILITY ANALYSIS STUDY  
TOWN HALL - OPTION 1 (EXISTING BASEMENT)

22 JANUARY 2020

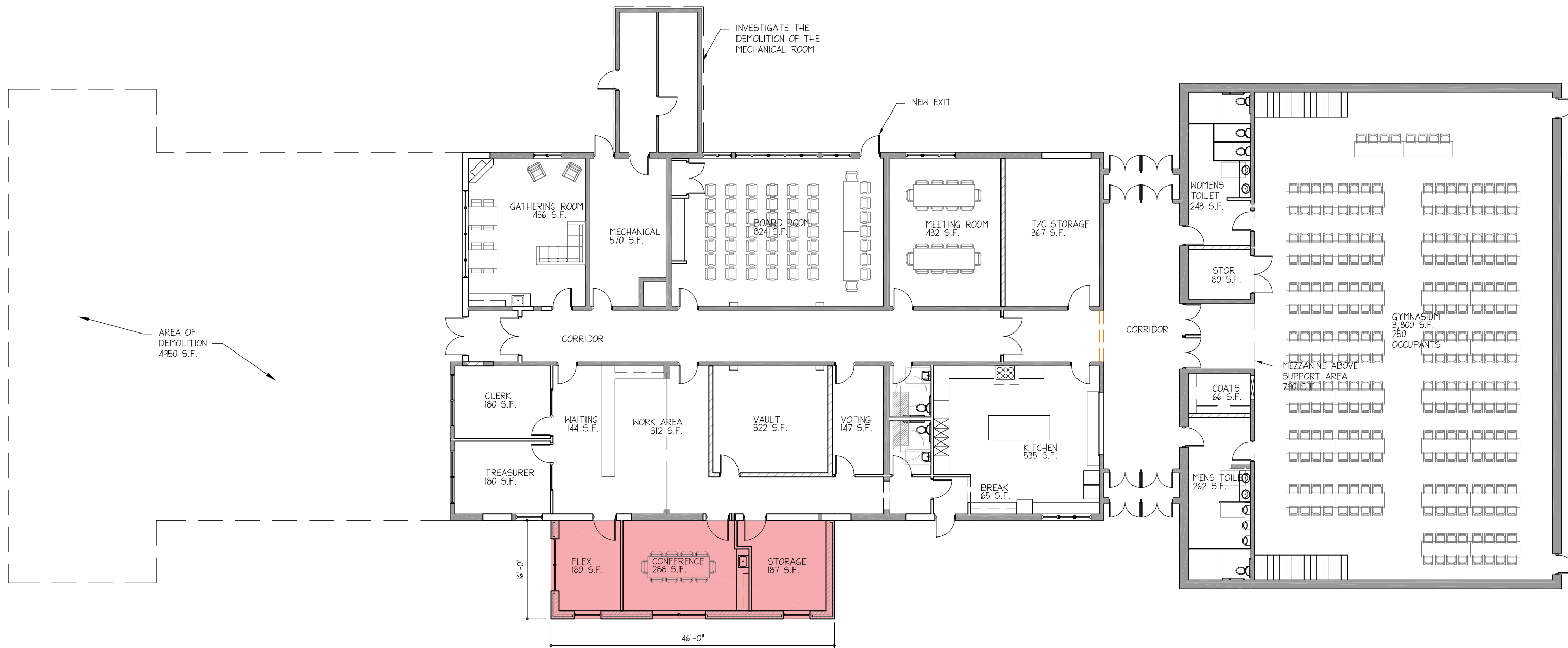
**BASEMENT**  
2,170 SF



**MAIN FLOOR PLAN**  
9,982 SF







# TOWN OF NEWBOLD FACILITY ANALYSIS FORMER ELEMENTARY SCHOOL

Prepared By



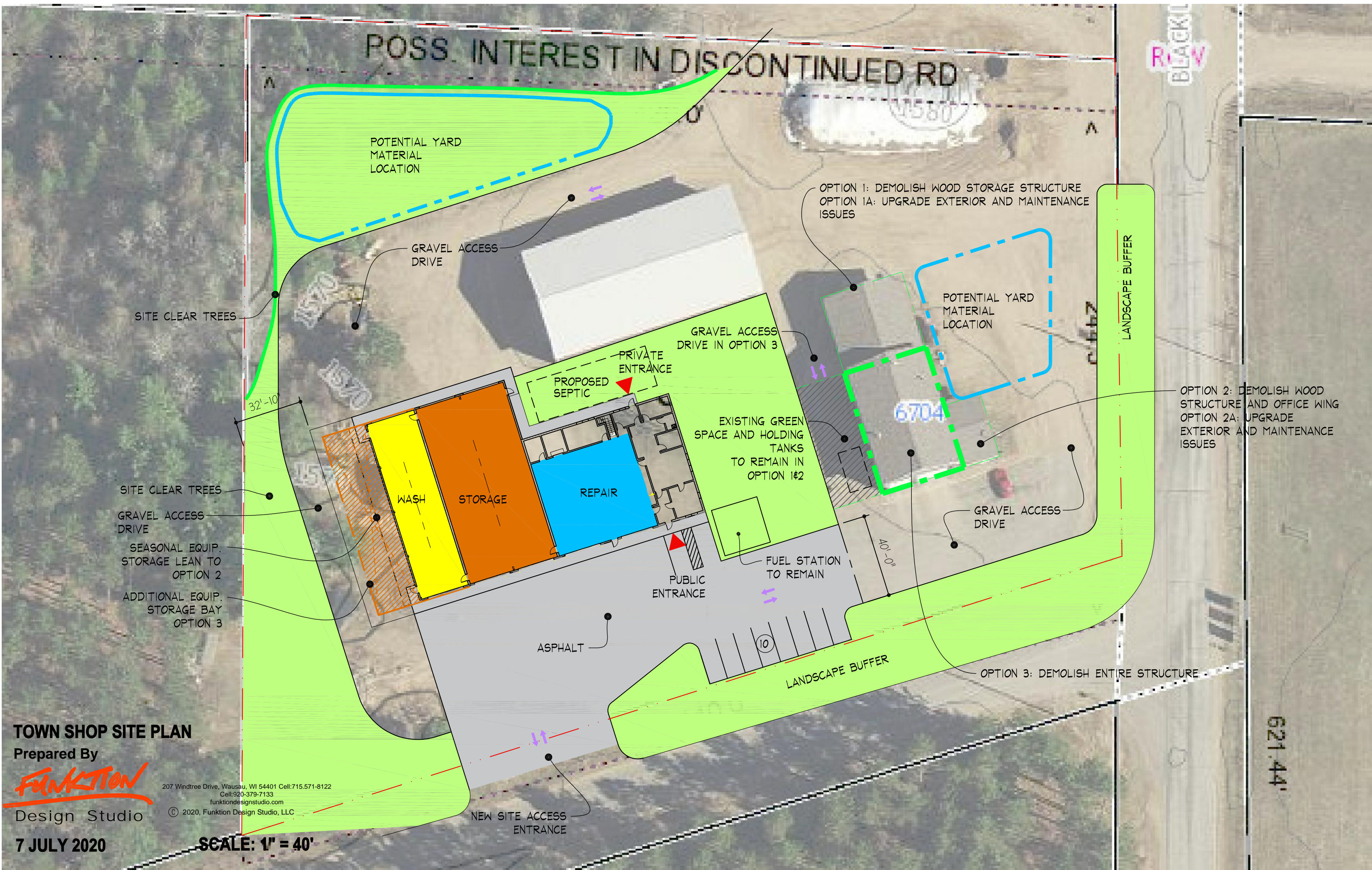
Design Studio

207 Windtree Drive, Wausau, WI 54401  
Cell: 715.571-8122 Cell: 920-379-7133  
funktiondesignstudio.com

© 2020, Funktion Design Studio, LLC

22 JANUARY 2020 SCALE: 1/16" = 1'-0"





**TOWN SHOP SITE PLAN**

Prepared By  
**FUNKTION**

207 Windtree Drive, Wausau, WI 54401 Cell: 715.571-8122  
Cell: 920-379-7133  
funktiondesignstudio.com

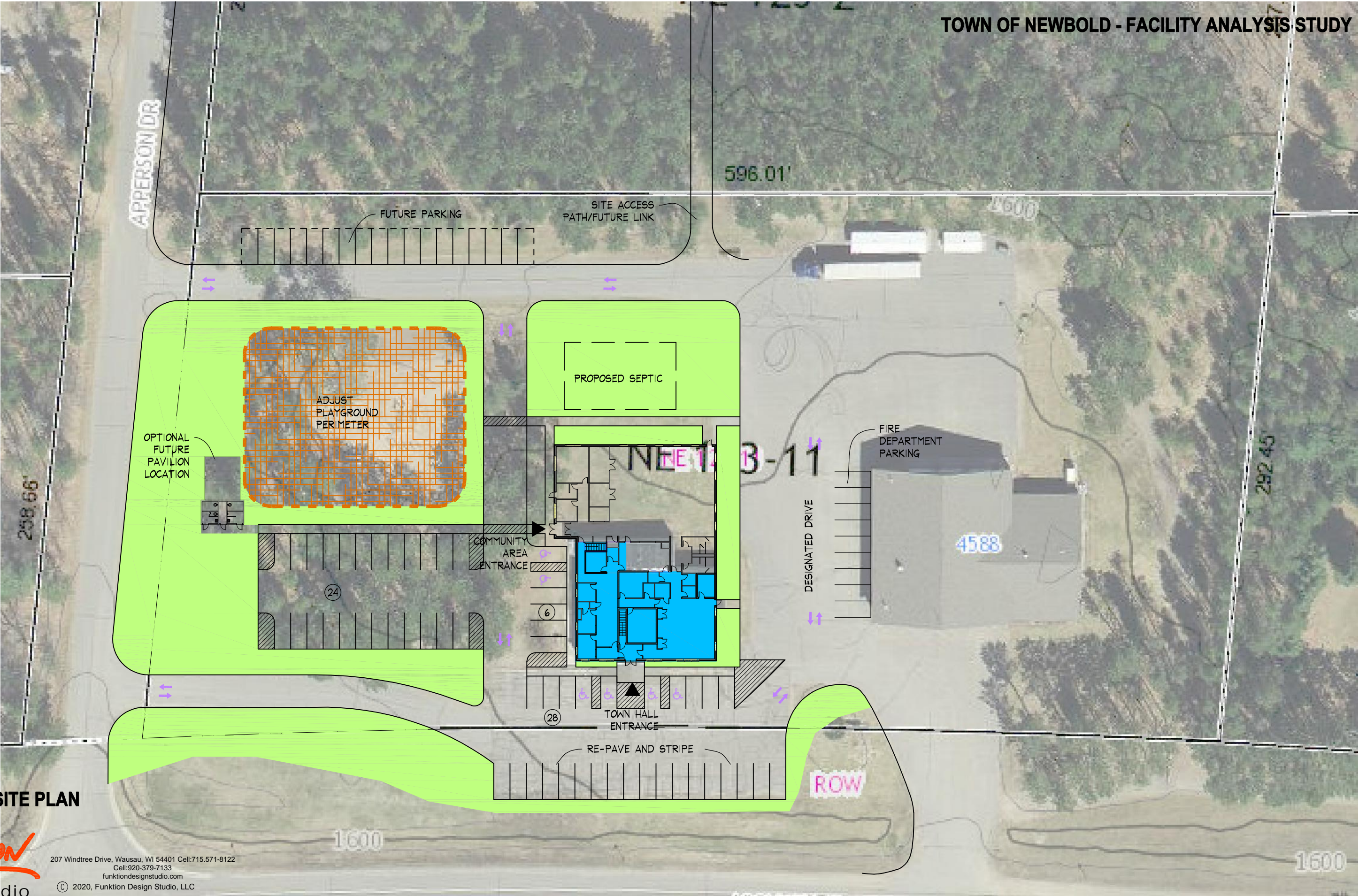
© 2020, Funktion Design Studio, LLC

Design Studio

7 JULY 2020

SCALE: 1" = 40'





TOWN HALL SITE PLAN

Prepared By

**FUNKTION**

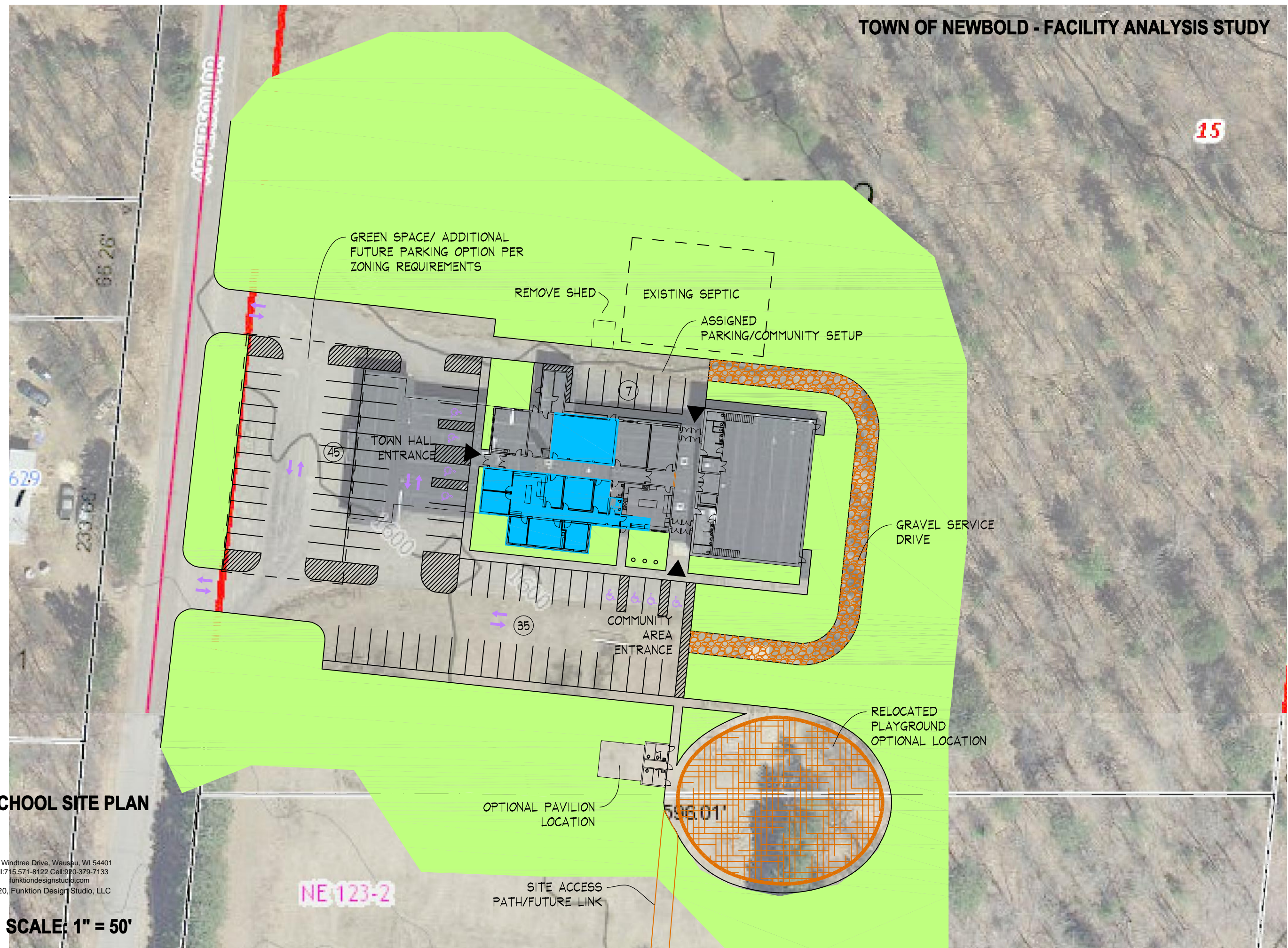
Design Studio

22 JANUARY 20

207 Windtree Drive, Wausau, WI 54401 Cell:715.571-8122  
Cell:920-379-7133  
funktiondesignstudio.com  
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SCALE: 1" = 50'





## TOWN HALL FORMER SCHOOL SITE PLAN

**Prepared By**

## FUNKTION

# Design Studio

**14 JULY 20**

207 Windtree Drive, Wausau, WI 54401  
Cell: 715.571-8122 Cell: 920-379-7133  
funktiondesignstudio.com  
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**SCALE: 1" = 50'**





## Town of Newbold – Facilities Analysis Study Report

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### 10.0 Facility Opinion of Probable Cost

An opinion of probable cost has been developed for each facility from our observations and evaluations by discipline, Architectural, Structural, Site, HVAC, Plumbing and Electrical. The opinion of probable cost includes a design and construction contingency and projected industry standard soft cost (architectural engineering fees, agency permits, soil borings, legal cost)





## Town of Newbold – Facilities Analysis Study Report

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2020 Opinion of Probable Construction Cost
Town of Newbold - Town Shop

Project budget prepared by Funktion Design Studio,LLC

9-Jul-20

			PEMB	
General Conditions			\$	80,000
Site Development			\$	246,000
Utilities: Well, Septic, Gas Extension	\$	42,500		
Site Demolition	\$	25,000		
Storm Water if over an acre	\$	30,000		
Sitework/Paving	\$	133,500		
Site restoration	\$	15,000		
Foundation			\$	86,588
A. Wall Footing/Foundation Wall	\$	68,289		
Interior foundations	\$	12,591		
E. 4'X8" Foundation Wall - Concrete Stoops	\$	5,709		
Substructure			\$	90,736
A. 4" Slab on Grade Assembly	\$	13,172		
C. 8" Slab on Grade Assembly	\$	77,564		
Superstructure			\$	475,562
A. Pre-Engineered Metal Building	\$	392,748		
Bollards	\$	8,400		
Exterior masonry front and base	\$	70,992		
Gutter/Downspouts	\$	3,421		
Doors and Windows			\$	172,283
D. Single Hollow Metal Interior Door	\$	19,038		
F. Single Hollow Metal Interior Door - Fire Rated	\$	15,531		
H. Single Hollow Metal Exterior Door	\$	10,966		
I. Hollow Metal Exterior Door w/ Glazing	\$	7,549		
P. Sectional Overhead Doors	\$	100,680		
Aluminum windows	\$	18,520		
Interior Construction			\$	131,656
Interior CMU	\$	106,044		
Stairway/Railings	\$	9,928		
Mezzanine	\$	15,684		
Interior Finishes			\$	28,884
Flooring	\$	18,580		
Ceiling	\$	6,905		
Walls	\$	3,399		
Finish Carpentry			\$	7,647
A. Carpentry	\$	7,647		
Mechanical - Plumbing/Fire Protection			\$	104,358
Plumbing	\$	103,377		
Accessories	\$	981		
Mechanical - Heating/Ventilation/Air Conditioning			\$	195,600
HVAC (Includes infloor heat)	\$	195,600		
Electrical			\$	157,300
A. Electrical	\$	157,300		
Equipment			\$	85,125
Shower/Eyewash	\$	1,125		
Pressure washer	\$	18,000		
Fixtures/furnishings	\$	16,000		
Exhaust Extraction - vehicle, welding/ Portable lift	\$	35,000		
Breakroom appliances, crew washer-dryer, lockers	\$	15,000		
Base Subtotal - Contruction Cost			\$	1,861,739
Design Contingency	10%	\$	186,174	
Contingency - Construction (After Bid)	10%	\$	186,174	
2020 Cost Increase	5%	\$	93,087	
Soft Cost			\$	248,756
Architectural/Engineering Services estimate	\$	167,556		
Agency Approval Fees (Building/HVAC/Plumbing Review)	\$	3,200		
Owner expenses (soil borings, utilities, permits, moving, legal cost)	\$	78,000		
Project Budget			\$	2,575,930

Site Option 1 - Demolition		
Demolish wood structure/utilities - restore site	\$	15,000
Selected demolition	\$	10,000
Contingency - design/construction 20%	\$	7,259
Total	\$	32,259
Option 1a - Existing DPW Upgrades		
Tuckpoint exterior, structural repairs, infill, paint exterior and interior	\$	22,500
New windows and doors	\$	52,000
Contingency - design/construction 20%	\$	14,900
Total	\$	89,400
Total of Option 2	\$	121,659

Site Option 2 - Demolition all buildings		
Demolish wood structure/office/utilities - restore site	\$	26,500
Contingency - design/construction 20%	\$	5,300
Total	\$	31,800
Building Addition - Lean to storage (no slab) = 900 s.f.		
Foundation w/ bollards	\$	16,485
Structure	\$	28,350
Contingency - design/construction 20%	\$	8,967
	\$	53,802
Option 2a - Existing DPW Upgrades		
Tuckpoint exterior, structural repairs, infill, paint exterior and interior	\$	18,500
New windows and doors	\$	32,000
Contingency - design/construction 20%	\$	10,100
Total	\$	60,600
Total of Option 2	\$	146,202

Site Option 3 - Demolition all buildings		
Demolish wood structure/office/utilities - restore site	\$	38,800
Contingency - design/construction 10%	\$	3,880
Total	\$	42,680
Option 3 - DPW Building Addition - Additional bay = 1,980 s.f.		
Concrete	\$	29,277
Building and openings	\$	94,678
MEP	\$	14,340
Contingency - design/construction 15%	\$	20,744
	\$	159,039
Total of Option 3	\$	201,719

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# 2020 Opinion of Probable Construction Cost

## Town of Newbold - Town hall

Project budget prepared by Funktion Design Studio, LLC

			9-Jul-20		
			Cavity/Siding	Stud	New Construction
General Conditions			\$ 105,476	\$ 89,655	\$ 105,476
Demolition			\$ 57,419	\$ 57,419	
Building Demolition	\$	30,000			\$ 45,000
C. Mold Redediation/Damproofing =10' H	\$	27,419			
Site Development			\$ 263,000	\$ 263,000	\$ 263,000
Site Work/Access Drive	\$	180,000			
Restoration, Topsoil, Seeding, Landscaping	\$	25,000			
Well	\$	8,000			
Septic System	\$	30,000			
Storm water system	\$	20,000			
Foundation			\$ 73,961	\$ 73,961	
Wall Footing / Foundation	\$	70,025			\$ 91,033
4'X8" Foundation Wall - Concrete Stoops	\$	3,935			\$ 5,500
Substructure			\$ 57,402	\$ 57,402	\$ -
4" Slab on Grade Assembly	\$	40,812			\$ 53,700
Steel Framing	\$	16,590			\$ 19,908
Superstructure			\$ 506,571		\$ 506,571
Metal Roofing System	\$	224,397			
Timber Framing - Entry	\$	78,649			
G. Exterior Wall System - Masonry Cavity Wall	\$	200,169			
L. Exterior Walls (incl. Stone Veneer, Fiberboard Siding, Cedar Shakes)				\$ 140,213	
Q. Wood Truss Roof System				\$ 139,306	
Soffit (3ft overhang) and Fascia Construction				\$ 30,779	
Gutters and Downspouts	\$	3,355		\$ 3,355	
Doors and Windows			\$ 151,445		\$ 151,445
Single Wood Interior Door	\$	39,777		\$ 39,777	
Double Wood Interior Door	\$	8,737		\$ 8,737	
Single Hollow Metal Interior Door	\$	6,148		\$ 6,148	
Single Hollow Metal Interior Door - Fire Rated	\$	10,050		\$ 10,050	
H. Single Hollow Metal Exterior Door	\$	11,344		\$ 11,344	
Double Hollow Metal Exterior Door	\$	36,741		\$ 36,741	
K. Hollow Metal Borrow Lights	\$	2,410		\$ 2,410	
R. Aluminum Windows (operable/no blinds)	\$	36,238			
Wood Windows, Metal clad - Exterior				\$ 22,330	
Interior Construction			\$ 82,250	\$ 82,250	\$ 82,250
Interior Mtl Stud Wall	\$	82,250			
B. Interior Wall Furring (concrete/masonry walls)	\$	33,368			
2 hour Fire Barrier	\$	20,337			
Interior Rooms - Masonry	\$	106,044			
Stair/Railing System	\$	13,488			
Interior Finishes			\$ 152,455	\$ 152,455	\$ 152,455
A. Flooring	\$	85,861			
B. Ceiling	\$	53,162			
C. Walls	\$	13,432			
Finish Carpentry			\$ 66,320	\$ 66,320	\$ 66,320
A. Carpentry	\$	66,320			
Toilet Room Accessories			\$ 5,254	\$ 5,254	\$ 5,254
A. Toilet Room Accessories	\$	2,224			
B. Toilet Partitions	\$	3,030			
Mechanical - Plumbing/Fire Protection			\$ 99,172	\$ 99,172	\$ 119,006
A. Plumbing	\$	99,172			
Mechanical - Heating/Ventilation/Air Conditioning			\$ 374,000		\$ 441,320
A. HVAC System	\$	374,000		\$ 261,800.00	
Electrical			\$ 240,000		\$ 276,000
Electrical Lighting	\$	120,000		\$ 96,000.00	
Electrical Power	\$	72,000		\$ 72,000	
Electrical Devices, Data - AV Conduit	\$	48,000		\$ 48,000	
Equipment			\$ 60,000	\$ 60,000	\$ 60,000
Furnishings/Fixtures/Equipment			\$ 50,000	\$ 50,000	\$ 50,000
Tables, Chairs, Office Furniture	\$	50,000			
Subtotal - Contruction Cost			\$ 2,344,724	\$ 1,985,876	\$ 2,494,238
Design Contingency	10%	\$ 234,472		\$ 198,588	\$ 249,424
Contingency - Construction (After Bid)	10%	\$ 234,472		\$ 198,588	\$ 249,424
2020 Cost Increase	5%	\$ 117,236		\$ 99,294	\$ 124,712
Construction Budget			\$ 2,930,905	\$ 2,482,346	\$ 3,117,797
Project Soft Costs			\$ 334,525		\$ 376,688
Architectural/Engineering Services		\$ 211,025		\$ 188,658	\$ 243,188
Agency Approval Fees (Building/HVAC/Plumbing Review)		\$ 3,500		3500	\$ 3,500
Owner expenses (soil borings, utilities, permits, moving, legal cost)		\$ 120,000		120000	\$ 130,000
Project Budget			\$ 3,265,430	\$ 2,794,504	\$ 3,494,485

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# 2020 Opinion of Probable Construction Cost

## Town of Newbold - Town hall Former School

Project budget prepared by Funktion Design Studio, LLC

9-Jul-20

<b>General Conditions</b>		<b>\$</b>	<b>105,476</b>
<b>Demolition</b>		<b>\$</b>	<b>187,135</b>
Building Demolition	\$	32,000	
Selective Demolition	\$	89,475	
Exterior wall clean, tuckpoint	\$	31,500	
Asbestos Remediation	\$	34,160	
<b>Site Development</b>		<b>\$</b>	<b>275,000</b>
Site Work/Parking / Sidewalks	\$	180,000	
Restoration, Topsoil, Seeding, Landscaping	\$	20,000	
Well	\$	10,000	
Septic System	\$	30,000	
Storm water system	\$	35,000	
<b>Foundation</b>		<b>\$</b>	<b>21,285</b>
Wall Footing / Foundation	\$	20,545	
4'X8" Foundation Wall - Concrete Stoops	\$	741	
<b>Substructure</b>		<b>\$</b>	<b>13,186</b>
4" Slab on Grade Assembly	\$	8,270	
Steel Framing	\$	4,917	
<b>Superstructure</b>		<b>\$</b>	<b>154,367</b>
A. Single Ply Membrane Roofing System	\$	82,744	
C. Steel Roof Framing - flat	\$	22,510	
G. Exterior Wall System - Masonry Cavity Wall	\$	45,384	
Gutters and Downspouts	\$	3,728	
<b>Doors and Windows</b>		<b>\$</b>	<b>89,688</b>
Single Wood Interior Door	\$	24,735	
Single Hollow Metal Interior Door - Fire Rated	\$	3,521	
H. Single Hollow Metal Exterior Door	\$	16,534	
Double Hollow Metal Exterior Door	\$	18,777	
R. Aluminum Windows (operable/no blinds)	\$	26,120	
<b>Interior Construction</b>		<b>\$</b>	<b>14,854</b>
Interior Mtl Stud Wall	\$	14,854	
B. Interior Wall Furring (concrete/masonry walls)	\$	12,952	
<b>Interior Finishes</b>		<b>\$</b>	<b>141,532</b>
A. Flooring	\$	85,843	
B. Ceiling	\$	25,758	
C. Walls	\$	29,932	
<b>Finish Carpentry</b>		<b>\$</b>	<b>76,530</b>
A. Carpentry	\$	76,530	
<b>Toilet Room Accessories</b>		<b>\$</b>	<b>6,080</b>
A. Toilet Room Accessories	\$	2,445	
B. Toilet Partitions	\$	3,635	
<b>Mechanical - Plumbing/Fire Protection</b>		<b>\$</b>	<b>68,000</b>
A. Plumbing	\$	68,000	
<b>Mechanical - Heating/Ventilation/Air Conditioning</b>		<b>\$</b>	<b>285,000</b>
A. HVAC System	\$	285,000	
<b>Electrical</b>		<b>\$</b>	<b>111,000</b>
Electrical Lighting	\$	72,000	
Electrical Power	\$	27,000	
Electrical Devices, Data - AV Conduit	\$	12,000	
<b>Equipment</b>		<b>\$</b>	<b>60,000</b>
<b>Furnishings/Fixtures/Equipment</b>		<b>\$</b>	<b>50,000</b>
Tables, Chairs, Office Furniture	\$	50,000	
<b>Subtotal - Contruction Cost</b>		<b>\$</b>	<b>1,659,133</b>
Design Contingency	10%	\$	165,913
Contingency - Construction (After Bid)	15%	\$	248,870
2020 construction cost increase 5%	5%	\$	82,957
<b>Construction Budget</b>		<b>\$</b>	<b>2,156,873</b>
<b>Project Soft Costs</b>		<b>\$</b>	<b>204,526</b>
Architectural/Engineering Services		\$	141,026
Agency Approval Fees (Building/HVAC/Plumbing Review)		\$	3,500
Owner expenses (soil borings, utilities, permits, moving, legal cost)		\$	60,000
<b>Project Budget</b>		<b>\$</b>	<b>2,361,399</b>

<b>Property Purchase - TBD</b>	<b>\$</b>	<b>200,000</b>
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### Energy Conservation related Upgrades

Additional Roof Insulation	\$	17,500
Exterior wall insulation, furing, finish, mechanical extensions	\$	42,000
Tuckpoint exterior, structural repairs, infill, paint exterior and interior	\$	19,500
Ceilings at all meeing rooms	\$	11,500
Mechanical system upgrades and security	\$	85,000
Contingency - design/construction 20%	\$	35,100
2020 construction cost increase 5%	\$	8,775
Total	\$	219,375

### Additional Parking Lot

Additional 24 parking spaces and service drive	\$	100,000
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## Town of Newbold – Facilities Analysis Study Report

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### 11.0 Final Programming Matrix Plan Options

The final options recommendation was delivered on January 22, 2020 during the board meeting presentation.

Funktion Design Studio, LLC presented to the Building Committee the final revisions to the proposed final facility options for the Town Shop, Town Hall at the existing Site and the Town Hall in the former elementary school. The final proposed s.f. programmed matrix was developed from committee meeting discussions and feedback of current and future needs.





## Town of Newbold – Facilities Analysis Study Report

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**Design Studio**

## Town of Newbold - Town Shop

### Programming Statement

Space Description		Required	Existing 3684	Final 11,294	New Building - Drive Thru 10,830 sf Main Floor, 464 sf Mezzanine
	<b>Administration/Support</b>				
1	Office - Supervisor	225	180	207	Lockable, files/record, built in storage, conference area 3-4
2	Vestibule/Waiting	80		116	Secure vestibule, 2 waiting chairs
3	Break room	300		341	Break/Meeting room
4	Staff toilet room - Male	130	57	83	Unisex/changing area
5	Staff toilet room - Female	80	27	56	Unisex/changing area
6	Locker Room - Share	250	81	196	Open Crew Room 8-10 occupants - (Changing area in Toilet room)
7	Changing/Shower	80			Changing area in Toilet Room
8	Laundry	70		20	
9	General storage	150	26	128	Shared with Mechanical
10	Repair Bays	2200	(750)	2237	Mobile lift area, 2 bays/dual one storage bay
11	Tools/work area	400	178	152	
12	Vehicle Storage Bays	7500	2405	3935	Current 4 units / Clear height 19'
13	Equipment Storage Bay	250	92		Not included
14	Wash Bay	1250		2137	Vehicle storage
15	Lubrication storage	120	75	115	
16	Lubrication dispensing station				
17	Parts storage	250	158	200	
18	Steel / Equipment Parts Storage	100	116	76	Adjacent to Repair Bay
19	Machining/ Welding Area	120		20	Mobile unit
20	Crane / Lift area			40	In one repair bay, Truck box lift 17'3", 13' high max, 77" lift 20' clear ht. to equipment
21	Mechanical Room	300	60		Mezzanine
22	Electrical/ Compressor	100	20	96	
23	Mezzanine Storage	500			
24	Mezzanine Mechanical			464	Adjacent to Repair Bay - Mechanical and storage
25	Circulation/Corridors/Walls 30%)	4337	209	675	
26					
27					
28					
29					
30					
<b>Total</b>		<b>18792</b>	<b>3684</b>	<b>11294</b>	

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## Design Studio

### Town of Newbold - Town Hall

#### Programming Statement

Space Description		Standard	Existing 6512	Final 9982	Existing facility with Additions Basement 2,170 sf
1	<b>Administrative /Town Hall</b>				
2	Lobby/Vestibule	120	106	107	Main entry separate wings
3	General Office/Reception Counter Space	120		76	Waiting and reception counter
4	Waiting Area	100			
5	Clerk Office	120		136	
6	Treasurer Office	120		144	Safe
7	Flex Office	100	83	100	Flexible Office space
8	Vault/Records	300	437	301	Near Treasurer and Clerk
9	Voting Storage	80	35	130	Voting machines and portable booths
10	Print/Mail/Workroom	300		488	General office supplies stored in cabinets, Supervisors, board and staff mailboxes, circulation included
11	Staff Toilet Room	50		46	
12	General Office Storage	100	360		
13	Supervisors / Conference Room	250		201	Wetbar area, up to 18 Occupancy
14	Small Conference Room	120			
15	Board Room	900	1058	1020	49 Occupants, in divided community center
16	Storage/IT	100		24	
17	Break (small kitchenette)	80		7	Inside Kitchen area
18					
19	<b>Common Use Areas</b>				
20	Lobby/Vestibule	150		63	Enclosed air link
21	Meeting Room 10-12 (2)	360		135	
22	Social Room	225		378	
23	Meeting Room 20-24	400			
24	Community Room - Large Format	3600		2598	200 Occupants
25	Catering Kitchen	400	270	390	3 comp sink, grease interceptor, dishwasher, admin. 374 s.f. kitchenette area
26	Janitor Area	60	11	77	Janitor and storage
27	General Storage	300	310	1057	
28	Table and Chair Storage	280		298	Adjacent to large multipurpose area
29	Men's Toilet Room	220	65	183	
30	Womens Toilet Room	220	66	210	
31	Mechanical	400	450	671	Basement
32	Coats	100	28	145	3 Areas (1 board, 2 large multifunction area)
33	Outside Toilet Rooms (2)	200		91	1 unisex, accessible to inside also
34					
35	Circulation 30%	2963	3233	906	Including Basement area
36					
37					
<b>Total</b>		<b>12838</b>	<b>6512</b>	<b>9982</b>	

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## Design Studio

# Town of Newbold - Former Elementary School

## Programming Statement

Space Description		Standard	Final 12652	Remarks/Features Addition
1	<b>Administrative /Town Hall</b>			
2	Lobby/Vestibule	120	240	3 vestibules
3	General Office/Reception Counter Space	120		Waiting area/service window
4	Waiting Area	100	144	
5	Clerk Office	120	180	
6	Treasurer Office	120	180	
7	Flex Office	100	180	
8	Vault/Records	300	322	
9	Voting Storage	80	147	
10	Print/Mail/Workroom	300	312	
11	Staff Toilet Room	50	50	
12	General Office Storage	100	187	
13	Supervisors / Conference Room	250	288	
14	Small Conference Room	120	0	
15	Board Room	900	824	
16	Storage/IT	100	10	
17	Break (small kitchenette)	80	65	In kitchen
18				
19	<b>Common Use Areas</b>			
20	Lobby/Vestibule	150		
21	Meeting Rooms 10-12	360		
22	Social Room	225	456	
23	Meeting Rooms 20-30 (2)	800	432	20 - 30 occupants
24	Community Room - Large Format	3600	3800	250 occupants
25	Catering Kitchen	400	535	
26	Janitor Area	60		In mechanical area
27	General Storage	300	870	Mezzanine (790)
28	Table and Chair Storage	280	367	
29	Men's Toilet Room	220	262	
30	Womens Toilet Room	220	248	
31	Mechanical	400	1000	570 in main building (verify req'd space)
32	Coats	100	66	
33	Unisex Toilet Room	50	50	
34	Circulation 20%	2025	1487	
35				
<b>Total</b>		<b>12150</b>	<b>12702</b>	