A Work Session of the Town Board of the Town of Clarence was held on Wednesday, April 18, 2012 at the Clarence Town Hall, One Town Place, Clarence, New York.

Supervisor David Hartzell called the meeting to order at 8:30 A.M. Members of the Town Board present were Councilmember's Patrick Casilio, Peter DiCostanzo and Robert Geiger. Other Town officials present were Town Attorney Lawrence Meckler, Civil Engineer Kathryn Vergo, Temporary Town Engineer Joseph Latona, and Senior Building Inspector David Metzger.

Motion by Councilman Geiger, seconded by Councilman Casilio to grant the request of Clarence Post No. 838 permission to store donated supplies at 4650 Thompson Road. The supplies are used for the assembly of containers that are sent and distributed to military men and women who serve in the armed forces in Iraq and Afghanistan through the "Packages Overseas Project." On the question, the Town will not be responsible for any damage, lost or stolen supplies. Clarence Post No. 838 will provide an insurance certificate. Upon roll call – Ayes: Councilman Geiger, Councilman Casilio and Supervisor Hartzell; Noes: None. Absent: Councilman DiCostanzo and Councilman Kolber. Motion carried.

Motion by Councilman Geiger, seconded by Councilman Casilio to authorize the Supervisor to sign a request for military aerial support from Niagara Air Force Base for a fly over on May 28, 2012 at approximately 11:00 AM beginning at Clarence High School to Clarence Town Park on Main Street in conjunction with the Memorial Day Parade sponsored by American Legion Post 838. On the question, this event has been cleared by the Greater Niagara International Airport and all other necessary agencies that are required to be notified and obtain clearance from. Upon roll call – Ayes: Councilman Geiger, Councilman Casilio, Supervisor Hartzell; Recuse: Councilman DiCostanzo. Motion carried.
(Councilman DiCostanzo arrived while taking roll call for the aforementioned motion.)

Clarence Public Library – Kenneth W. Pearl, R.A.
Kenneth Pearl is a NY registered architect based in the Williamsville area. His firm is unusual in the type of work they do. They do work throughout the northeast. They are three different companies, Architecture Unlimited, LLC is an architecture firm started in the 90's – they specialize in repair and remodeling work. AUbuild, LLC is a company that was formed to get involved in general construction activities. Building Science Services, LLC is a newer endeavor that takes a significant amount of forensic and scientific work bundled into its own package for its own purposes.

A power point presentation was given. Several photos were taken showing ice build up on the roof at the library which is the core of the problem. The Parks Department has done a good job of keeping the buildup at bay by installing thermal wires – this is the number one defensive measure that is in place now. The County's personal handles the problems differently from inside the building. The staff has a significant plan in place for tracking water leaks, dealing with them and keeping them from being a nuisance to the public and minimizing damage.

Councilman Kolber arrived at 9:00 AM.

Mr. Pearl gave a tour (power point) of what his firm has been monitoring over the years. A photo of a concealed space just above the ceiling shows water running down the blocks. Water infiltrates the building during certain types of rain patterns; the library staff has many, many vessels throughout the building that they use to collect water (coffee cans, garbage cans etc.) in the various areas.

Kenneth Pearl role to date has been forensic engineering and forensic construction evaluations, liabilities analysis/litigation support, basic scoping of what to do so cost projections can be put together. The goal is funding for corrections. They have not been in a mode of solving these problems but rather figuring out how to get funding and find a resolution to solve these problems. The next step would be to plan and execute the corrective action.

Because of the litigation process, Architecture Unlimited knows what needs to be done. They had to do some type of limited engineering and had to come up with solutions. There may be better solutions but

they came up with solutions that they knew would work. The endeavor over the past couple of years has involved numerous interactions with opposition experts. Architecture Unlimited tried to take advantage of that to see if they could come up with better ideas. Most of the ideas that Architecture Unlimited has come up with still stand as the best ideas even by the opposition experts. The primary problems with the building are engineering problems buried in the infrastructure. The opposition experts got several engineering firms involved especially in the last couple of years so it has been a process of trying to find the best science to move forward. The specifics about how they will solve these problems involve quite a bit of engineering work.

The corrective measures break down into 11 categories:

- Corrections to roof assembly
- Corrections to HVAC relief air dampers
- Corrections to structural roof frame
- Corrections to upper roof/attic access compliance
- Correction to damaged and undersized gutters/downspouts
- Corrections to roof's non-combustible components
- Corrections to saturated interior wall assemblies
- Corrections to non-roof thermal envelope
- Repair existing interior finishes damaged by water
- Repair interior finishes to be damaged for work access
- Repair exterior elements related to water infiltration

One of the main corrective measures is to correct the roof assembly. Basically the library is a gigantic 20,000 square foot ranch house with a hip roof. There are gaps in the insulation and the roof cannot breath. You want to contain the heat and slow it before it leaves the building because when it leaves, it warms the roof deck and causes snow to melt forming icicles. You want to have ventilation that can sweep cool air underneath the roof deck to help supplement this process plus it keeps moisture out of the system so it does not cause any damage to wood assemblies in particular.

Architecture Unlimited is proposing to put a system of furring on top of the roof so that they can put another layer of roofing approximately two inches above existing roof which will create another air space. This will work naturally in some of the main areas however the corners of the building will not benefit from it – this will have to be supplemented with some type of mechanical system. The new solar system is going to help power this. There is a budget in place to put some type of decorative cupola on top of the building where mechanical components can be added to cause additional air to move through the weak points on the building. They have a concept that involves some extra architectural work that creates basically a smoke screen to solve the engineering problems, but it will be done in a way as to not make the building look like a factory when it is done.

There are three different wood elements that the roof is built with. The top section is trusses, pre-engineered rafters (specialty type of wood product), and then conventional wood framing (similar to what a house would be made of). Field Observations show specific snow melt patterns, frost patterns and dew patterns. You can tell where the framing changes. Snow melt patterns reveal ventilation problems and heat loss concentrations. Morning condensation in the summertime reveals same patterns.

Many thermal images were taken. When you look at the outside of the building, you want to see blues and purples. This indicates that the heat is being contained. The thermal images taken showed green, yellow and orange which depict significant heat loss. The walls are losing more heat than the windows. The round image (decorative louvers) shows heat loss at the relief vents due to backward installation because the fabricator constructed them wrong.

Interior images should be yellow and orange however the greens, blues and purples that were picked up by the thermal camera depict significant heat loss.

Mr. Pearl indicated that his company is used to seeing these types of problems through their investigative work but there was something about the library that was beyond the norm. The drive

through area for the book drop off at the library there are three large louvers into the mechanical area for the heating and cooling system. The building has to be smart enough to manage the energy system in a manner that it can bring outside air into the building for air quality purposes and for heating and cooling purposes. At a minimum, the library is always bringing in 10% outside air. On a day where it is cooler in the morning but warmer in the afternoon, it may be warm enough in the library where the air conditioning could be called for even though it is still 50 degrees outside. The mechanical systems are smart enough to know that there is no point in running the air conditioning system with the cool air coming in however it may ramp up to 70% mixed air and will bring in quite a lot of outside air to supplement its system. What is happening is the building is bringing in outside air and over pressurizing. The job of the round decorative louvers (relief dampers) located around the building is to let the air out. However, the louvers were installed backwards because they were constructed incorrectly. You have a building with heat loss, add in significant ability to over pressurize which means it is super charging your heat loss. This has to be fixed. The louvers (relief dampers) cannot be fixed, they will have to be replaced and they are extremely difficult to get at.

Along with discussion about adding components to the building, more weight is being added to the building. There are problems with the buildings existing capacity. There are components missing from the building structure. The pre-engineered framing systems come with a set of detailed instructions from the manufacturers, engineers would be monitoring this and tradesmen should have known this. The pre-engineered trusses and pre-engineered rafters were not properly braced. Any additional weight on the roof will cause them to twist. These braces have to somehow be installed.

When there are problems with insulation and ventilation, vapors moving into the system cannot move through some of these elements like heat can and gets left behind. There is evidence that the roof structure is being adversely affected, the plywood is delaminating on the roof deck because engineering did not solve some issues that it needed to.

Roof and attic accesses were poorly planned; access was not designed into the original project. There is a roof hatch into the attic. You have to go outside the building, up a ladder onto the roof, through the hatch, down another ladder onto cat walks. An agent goes in there at least once a year to recertify the sprinkler system which is located there. There are other reasons the hatch has to be accessed periodically as well. This hatch has to be made compliant with OSHA regulations as well. If we move in the direction of a cupola that solves one problem, they will make a component on it where there are louvers that can open and they can get rid of that component and substitute it with something else. This hatch system was not in the original plans; it was an error by the original design team. They did not provide any form of access into the area. A sprinkler system tradesman who was concerned about getting his portion of work completed could not get in to do their final inspections of the job so they designed and installed the hatch area on the roof.

The gutters on the library are smaller than specified or allowed by code. Current codes require larger gutters than original project specification. On any given rainy day you can see the wash out from the gutters which damage the landscaping. Someone thought it was a good idea to have tapered cuts at the ends of the gutters however, this is not good practice there is evidence of ice and water damage due to open ends.

Corrections to roof's non-combustible components – wood is not allowed to be in this type of building construction in a as is form. It has to have a non-combustible surface covering on it which is why there is a second layer of drywall in the building which is not a decorative drywall. There are many issues with this, it serves to keeping heat loss under control plus it is the vapor barrier element. There are many examples of where water has been coming through and damaging the drywall and the insulation above it. There are areas where it was never finished. Water damage is evident. There is deterioration of fire rated drywall in concealed attic space, fire rated drywall seams not property sealed, poor workmanship to fire barrier, incomplete smoke barriers, exposed foam insulation which is a fire code violation.

The trades left many tools up inside the building. The cameras captured areas where miscellaneous drywall was not finished being installed. There will be some difficulty getting at it – it will have to be decided how many of these battles are going to be fought. There is no guarantee that perfect heat loss control can be achieved but that will be countered with better ventilation.

Corrections to saturated interior wall assemblies – thermal imaging indicates there is water behind some walls. When you have heat loss and it is creating ice, you are losing money in the form of heating bills and it is causing damage to the building as well. Thermal camera imaging indicates where heat is being lost in a significant way in some areas and will be much more expensive to solve

Correction to interior finishes – damages from ongoing and past water infiltration. Water infiltration through lighting fixtures, interior trim and millwork. Nineteen windows have been replaced. The manufacturer honored their warranty and replaced the windows however they did not indicate what they found when the windows were removed. Temporary Town Engineer Joseph Latona stated that it was a window defect and had nothing to do with leaking water. There is no money in the budget to deal with the windows.

The other type of interior finishes will required getting up through a ceiling area and will prove to be very challenging with sprinkler piping, HVAC systems, ceiling supports, ducts etc. There is nothing wrong with the system, it was just not intended for anyone to get back up there to work on it. There is duct work that delivers the air; it does not duct it back again. If they start cutting and removing drywall the open ports in the return air system will deliver dust to every part of the library. From an engineering perspective, Mr. Pearl stated that they would like to minimize the amount of work that gets done from the inside.

Correction to exterior building and site damage – roof shingles are breaking away due to ice activities and some issues with the roof itself. Shingles are not sealed and nails are popping, the vent damper is not closing and is causing water leaks in the lavatory. Inferior metal work in the soffit area, products were installed backwards, two layers of drywall substituted for cement board over plywood, ventilation baffles not per manufactures instructions.

Corrections methodology – building components require re-engineering before reconstruction, access via interior or exterior methodology, keep facility open for public use, keep occupants safe, and allow for problems and contingencies. Some repairs will have to be done from the inside of the building but they would like to do as much as they can from the outside of the building.

Two methods of roof/ventilation remediation:
From inside the building – remove lower and upper ACT/drywall ceilings, remove insulation and install correct amounts of insulation. This will not rectify other roof problems and will require closing of the library during construction.

From outside the building - remove roof shingles and sheathing, add furring to form correct ventilation space, re-sheath and re-roof. This will correct other flashing and roof problems and will require phased construction. The library will remain open. It is recommended that remedial efforts be approached from the outside.

Cost Projections – There is a settlement amount. For several years Architects Unlimited hovered in a cost projection of approximately $970,000 to do these repairs. The last cost opinion of the $970,000 was September 2011; it included a 25% overhead and profit margin. This is high risk work, not your typical construction project work on the market. They included a 15% contingency for unforeseen conditions and 16% architecture and engineering fees related to complexity of the project. Plans have to be reengineered and stamped for building permit; there is forensic engineering apart from what has already been done. They also added in 6% for construction management fees. Architecture Unlimited Ok'd the settlement based on conditions of non-traditional procurement methods and limited owner compromise. There are custom features in the building, if the budget does not allow, more standardized solutions will have to be implemented.

Procurement Options
Traditional Design/Bid/Build, with multiple-primed contracts as required by NYS Law. This is the most common way to do any public project in NYS. Engineers are brought on board and the project is bid out. The project generally passes off to the construction entities usually in the form of a General Contractor.

The design team shifts their roll to an administrative roll. You do not generally hire one general contractor in a public project, the library had four contracts.

Design/Bid/Build with a Construction Management assists, with multiple-prime contracts as required by NYS Law. A school district would do this method, they have significant amount of in-house facilities engineering people and staff that can work the capital improvement projects. A municipality may not always have people dedicated to the task, so outside help is brought in.

Design/Build - this is common in the private sector but there are legal restrictions which is why you rarely see it in public procurement work.

Hybrid – This is something Architecture Unlimited does when they get called into specific situations. A Hybrid might involve an architect serving as the Construction Manager direct to the owner. You could bid the project in the traditional sense to prime contracts or directly to specific trades and vendors. The library project might be a good candidate for this type of procurement work because we do not need all the trades.

Senior Building Inspector David Metzger asked that if the building had been constructed of steel, no wood with the basic architectural features could some of these problems been avoided. Ken Pearl stated that the problems were not so much the building methods but the design work.

Town Attorney Meckler stated that in speaking with Town Engineer Lavocat, it seems the simplest way of doing this is to have a design of what needs to be done and bid it out with alternatives. Then the town can choose what they have done based on cost. Ken Pearl stated that in theory that is correct but based on an engineer perspective, you are increasing your cost because bid packages have to be put together differently for those two scenarios.

Town Attorney Meckler stated that we like the single contract entity with a CM with a clean design. You could put the design out to bid, have a contractor bid on it; you could have alternatives depending on the design. This seems like the simplest, cleanest way with a Construction Manager that will oversee the work. Ken Pearl stated that this does not have to be decided now; there is enough engineering work that stills needs to be done.

Councilman Kolber asked if there would be a cost savings to shutting the building down and doing all the work and would it speed up the time frame of the remediation work. Ken Pearl stated that they ran two costs scenarios – one was to work in small areas, spend the extra money for containment and decommissioning the mechanical systems, and have temporary systems to keep the dust from moving around. They would work in small crews and it would take longer to complete the work. They ran another scenario where they would shut the building down, put in large crews and did the work as fast as possible. Both cost scenarios came out more expensive than doing the work from the outside.
The problems are solvable but will be challenging, it will take at least three – four months before we can go out to bid.

Councilman Casilio has one Attorney-Client item to discuss.

There being no further business, the Work Session adjourned at 9:45 A.M.

Darcy A. Snyder
Deputy Town Clerk