

MEETING MINUTES

To: Town of Merrimac MA Public Safety
Complex Building Committee

From: Janet M. Slemenda
Staci M. Villa

Subject: Meeting 04

Date: May 24, 2016

Project: Merrimac Public Safety
Complex Study

Job No: 21512

Attending:

- Andrew Conner (AC), Board of Selectmen (BoS), Fire Dept.,
selectman2@townofmerrimac.com
- Chief Eric Shears (ES) , Chief of Police, eshears@merrimacpolice.org
- Chief Ralph Spencer (RS), Fire Chief, ralph.spencer@merrimacfire.com
- Robert Sinibaldi (RS), DPW Director, dpwdir@townofmerrimac.com
- Larry Fisher (LF), Fire Dept. Deputy Chief, lfisher.electric@comcast.net
- Richard Holcroft (RH), Police Dept. Patrolman, rholfcroft@merrimacpolice.org
- Richard LeSavoy (RLS), Finance Committee Chairman, lesavoy@comcast.net
- Mark Tocci (MT), Building Committee, mark.tocci@crossfieldengineering.com
- Jennifer Penney (JP), BoS Executive Assistant, selectmen@townofmerrimac.com
- Carol McLeod (CML), Finance Director, cmcleod@townofmerrimac.com
- Rick Pinciario (RP), Former Selectman, rick@westnewburyinsurance.net
- Steven Brown (SB), Fire Department, MFDSRBEMT@comcast.net
- Laura Dillingham-Mailman (LD), Senior Ctr. Dir., ldmailman@townofmerrimac.com
- Janet Slemenda (JMS), HKT Architects, jslemenda@hktarchitects.com
- Eric Kluz (WEK), HKT Architects, ekluz@hktarchitects.com
- Nancy Joyce (NJJ), HKT Architects, njoyce@hktarchitects.com
- Staci M. Villa (SMV), HKT Architects, svilla@hktarchitects.com

Item:

Review of Civil + Structural Observations

- 4.01 Janet M. Slemenda (JMS) reviewed the agenda and discussed that the purpose of the meeting was to review the civil and structural observation reports prepared by Pare Corporation and to discuss historical cost data for new construction.

The observation report highlights were reviewed in a PowerPoint presentation, were handed out to attendees at the committee meeting, and are attached for review.

- 4.02 JMS gave overview of the civil observations.
- Existing Conditions:
 - Zoning: Agricultural Residential and Village Residential.
 - Natural Environment: Site pitches east to west towards Cobbler Brook. Soils are classified as "Canton Fine Sandy Loam". Regulated areas include wetlands to the west of site with a 100 foot buffer zone of which 75% of site falls within that resource. Site includes a Natural Heritage and Endangered Species Program habitat.
 - Infrastructure: Parking is unmarked, screening to abutters is not provided. Utilities: Stormwater not currently managed or treated. Municipal sewer, water and electricity currently serve site. Natural Gas is by National Grid.
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- **Future Steps:**
 - **Soils:** In-depth geotechnical investigation and soil evaluation will need to be done to properly design foundations for future buildings and drainage improvements.
 - **Regulated Areas:** Further discussion on local wetlands regulations to understand prohibitions and exemptions. Conversation with Conservation Committee needed early on.
 - **Parking and Driveways:** Coordination with the Town required including location of accessible spaces.
 - **Utilities:** Future improvements would require mitigation and treatment of stormwater from building and site. Must meet MA DEP and MA Stormwater Handbook requirements.
 - **Sewer:** Treatment of floor drains prior to discharge into tight tank could be required.
 - **Water, Electric and Gas:** Analysis for future demands would be required to determine level of improvements required.
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4.03 Civil Discussion/Comments with Committee and HKT

- Rick Pinciario (RP) noted that it is blue spotted salamanders that are protected by the Natural Heritage and Endangered Species Program.
 - JMS noted that the location of accessible parking spaces and pathways should be delineated.
 - Stormwater issues need to be addressed. Could a sonar scan be done to find where the underground pipes lead to?
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4.04 JMS gave overview of the structural observations.

- **Existing Conditions:**
 - **Structural Systems:**
 - Slab on grade with concrete foundation walls; partial structural slab with basement in Police department.
 - Second floor framing: lumber joists and plywood floor supported on CMU partitions.
 - Roof: Low slope of wood planking supported by concrete encased steel beams, supported by masonry piers.
 - Walls: 12" thick multi-wythe brick masonry; brick parapets; interior walls mix of CMU and brick masonry.
 - Lateral load resisting system: plans do not designate system. Roof planking and second floor plywood likely act as horizontal diaphragm and walls act as shear walls.
 - **Observations: Fire Department and DPW Workshops**
 - Concrete slab appears in good condition.
 - Existing roof planking appears in good condition.
 - Interior brick walls and CMU partitions appear to be in fair condition.
 - Cracks should be filled with epoxy adhesive or routed and filled with repair mortar depending on situation.
 - Exterior brick walls in fair-to-poor conditions. Mortar joints deteriorated or spalled in some areas. Walls generally plumb with some areas of concern.
 - Mortar joints to be cleaned and repointed.
 - Consideration for covering brick walls with cladding to protect and extend life.
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- Cracked and rotated jambs to be investigated.
 - Repair some lintel conditions.
 - Observations: Police Station Foundation
 - Foundation contains structural elements that, where visible, are in poor condition
 - Basement: Partial filled basement – extensive cracking observed, air humid, standing water observed in sump pit.
 - Building foundation including perimeter walls, beams and piers: limited visibility but cracks and spalls are present along some beam piers and exposed steel is corroded. Diagonal cracks also observed at foundation walls.
 - Recommendations for Police Station Foundation
 - Observed cracks may be indicative of differential settlement of foundation.
 - Pare spoke with their Geotechnical staff who recommended a comprehensive investigation to determine extents for settlement, potential causes and remediation options. Further evaluation to determine potential source of water infiltration should be performed.
 - Benefits versus costs associated with future use of this portion of the building can then be weighed.
 - At this time, humidity and moisture issues should be evaluated to determine a cost effective method of control.
 - Existing roof planking appears in good condition.
 - Interior brick walls and CMU partitions appear to be in fair condition
 - Cracks should be filled with epoxy adhesive or routed and filled with repair mortar depending on situation.
 - Exterior brick walls in fair-to-poor conditions: Mortar joints deteriorated or spalled in some areas. Walls generally plumb with some areas of concern.
 - Mortar joints to be cleaned and repointed.
 - Consideration for covering brick walls with cladding to protect and extend life.
 - Cracked and rotated jambs to be investigated.
 - Repair some lintel conditions.

4.05 Structural Discussion/Comments with Committee and HKT

- JMS mentioned that some of the issues mentioned for the Fire Department and DPW Workshops should be part of a short term maintenance plan.
 - Mark Tocci (MT) noted that in the Police Station basement there is a system for moving air and having adequate air current move across the surface of the concrete will help to limit the condensation. It was also noted that there are no windows/openings to place a louver in. An “area way” would need to be installed in the front or side of the building. Chief Shears noted that some equipment has broken and needs to be replaced.
 - JMS noted that one option for protecting the exterior walls would be to clad them with a new finish material, including air barrier and insulation.
 - MT added that a cladding option might be a good solution. This way the envelope is protected and the building could meet energy codes.
 - Various individuals voiced concern that any fix to the slab/foundation at the police area would be too costly.
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4.06 JMS gave overview of the Building Code Review by Pare Corporation.

- All portions of the building
 - *The review is based upon the 8th edition of the Massachusetts Building Code. The 9th edition of the code is scheduled to be put into effect in the summer of 2016. Pare has reviewed a draft version of the 9th edition of the code and it appears that relevant structural provisions of the code discussed below will be relatively unchanged in 9th edition.*
 - Pare understood that extensive renovation and re-programming would be required for the building to continue its use by the police department, fire department and/or DPW.
 - This renovation would likely be classified as an “Alteration – Level 3” as the “work area” would exceed 50% of the aggregate area of the building. The “work area” is defined by the International Existing Building Code as “that portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents.”
 - The following structural provisions of the Massachusetts Building Code apply to “Alteration – Level 3” work:
 - Existing structural elements need to be analyzed (and retrofitted or replaced as necessary) if loads supported by those elements increase by more than 5%.
 - Minimum seismic retrofits would be required as the existing structure consists of unreinforced load-bearing brick masonry. Wall anchorage: Wall anchors shall be installed at roof and floor levels to tie the masonry walls to these structures. Interior CMU partitions do not appear to be secured to the roof structure. Parapets shall be braced back to the roof structure.
 - If the area of structural alterations exceeds 30% of the total floor and roof areas of the building, or if overall building weight is increased by more than 10%, then the structural work would be considered a “Substantial Structural Alteration” and the building must be analyzed and retrofitted to resist current building-code prescribed wind loads and reduced seismic loads. The areas to be counted toward the 30% structural alterations are those areas tributary to vertical load-carrying components (e.g. joists, decking, beams, walls, columns) that will be added, removed, or altered. Required retrofits may include, but not be limited to: adding new braced frames; strengthening existing or adding new shear walls; strengthening existing or adding new foundations to support these elements; and strengthening existing diaphragms.
 - If the area of *structural* alterations is less than or equal to 30% of the total floor and roof areas of the building, or if overall building weight is increased by less than or equal to 10%, then the structural work would be considered a “Limited Structural Alteration”. For a Limited Structural Alteration, only the component of the building’s lateral-load resisting system that is being altered must be analyzed and retrofitted to meet current building-code prescribed wind loads and reduced seismic loads. This analysis needs to account for the cumulative effects of prior alterations made to the building (i.e. additions, renovations) to determine their effect on the component. For example, a steel braced frame may need to be added if a large opening is made in one of the existing brick-masonry walls. A “whole building” lateral load
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analysis/retrofit is typically not required for a Limited Structural Alteration.

Estimated Total Project Costs Using Historical Date for New Construction

- 4.07 JMS gave overview of the potential Total Project Costs including:
- Hard Costs: Construction
 - Demolition as needed + Construction of Building
 - Construction of previously developed site with minimal complicating issues or construction at a new undeveloped site
 - Design, Estimating + Construction Contingencies + Escalation to Mid-Point of Construction
 - Soft Costs: Administrative
 - Fees for design team, OPM, Clerk-of-Works, Special Services, Owners Contingency
 - Prequalification, Printing, Advertisement, Permitting, Legal, Financing, Commissioning + Testing
 - Furniture, Fixtures, Equipment, Low Voltage Systems
 - Utility Back Charges, Temporary Facilities and Moving Costs

4.08 The following table indicates probable costs for both hard and soft construction costs for new buildings based on historical data. They are not based on any site or specific building details but uses the square footages discussed at Meeting #3 and costs compiled from several recently constructed or bid projects.

<i>Existing Building at 22,406 +/-</i>	Square Footage	Hard Costs @ \$390/sf + \$315 /sf	Soft Costs @ 25%	Total Project Costs
Fire, Police + DPW <i>Combined</i>	58,177	\$20,797,080	\$6,932,360	\$27,729,440
Fire + Police <i>Combined</i>	32,950	\$12,850,500	\$4,283,500	\$17,134,000
Fire + DPW <i>Combined</i>	47,745	\$16,728,600	\$5,576,200	\$22,304,800
Police + DPW <i>Combined</i>	41,022	\$14,106,630	\$4,702,210	\$18,808,840
Police, <i>Stand-Alone</i>	15,531	\$6,057,090	\$2,019,030	\$8,076,120
Fire, <i>Stand-Alone</i>	22,254	\$8,679,060	\$2,893,020	\$11,572,080
DPW, <i>Stand-Alone</i>	26,789	\$8,438,535	\$2,812,845	\$11,251,380

4.09 The Committee members discussed the possibilities for this project based on the civil and structural observations and comments and the possible total projects costs.

Carol McLeod (CML) asked what the cost of geotechnical analysis may cost. JMS responded in the \$15-20,000 range for the initial response which hopefully, but not necessarily, would uncover the reason for the settlement issue. A geotechnical analysis may include 5-6 borings, visual methods and other testing.

The Committee felt that an option for reuse of the building, with a possible demolition of the existing police administration and garage area, and a possible rebuild in this footprint, might be the way to proceed for the Fire Department. Another site that would

meet the needs of the FD, based on response times, has not been identified. It was noted that if the Town decided to renovate, a more detailed investigation would need to take place to obtain more information about the existing building.

In this scenario, a new Police Station and a new Department of Public Works, perhaps on two different sites, would be planned. This construction would be completed and the departments would move. Renovation at the existing site would then begin. A phased approach for renovations would be considered (rear portion renovated, FD move to rear of site, front portion renovated and then full move in) as well as a temporary off site move to decrease overall construction time.

MT noted that the existing building needs a lot of mechanical/electrical work. There are also no sprinklers in the building and no fire alarm system on one side. The amount of work will be substantial if one of the departments stayed. Is the building large enough for the Fire Department if the Police and DPW left? If the building were to house the Fire Department, interior renovations would be required as well as work on the building envelope. The consensus is that the Fire Department would like to stay in the existing building.

If the project is taken to the next step, the programming numbers will need to be reviewed again. Everyone needs to consider that if stand-alone options are chosen, each building will need their own mechanical and electrical rooms and some of the “shared spaces” will need to be included in each building program.

It was noted that there are a lot of moving parts to think about. Renovations for Fire Department could be at least \$200-\$250/SF (not including soft costs) using historical data, but no formal estimating has been done.

CML mentioned that if all 3 projects are not done together, the Town probably wouldn't support the project at all.

A discussion of the cost of temporary facilities was brought up and has to be considered when renovating the existing building. Tents can cost as much as \$7,000/month and is probably cheaper to buy than rent as it could always be used for other Town projects. The cost of temporary infrastructure (i.e. water, HVAC, etc.) also needs to be considered. It was reiterated that a lot of fire stations can remain fully functional while being renovated.

The question was asked what HKT would recommend. JMS explained that if money was no object, the entire building would be torn down and reconstructed. The more realistic and viable option is to renovate, including tearing down the police portion of the building, for the Fire Department, and constructing new buildings for the Police Department and DPW on other Town sites.

Next Steps

- 4.10 The Committee plans on meeting as a group to discuss all their options. HKT will then meet one more time with the Committee to discuss the decision so that it can be included in the executive summary for the report. HKT will begin assembling the report.
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Next Meeting to be held: TBD

Please contact HKT Architects within three business days if these minutes do not accurately reflect discussions.

Cc: All attendees

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