

# **Town Buildings Committee Public Meeting**

**December 7, 2013**

## **Attendees**

- Dave Upton
- Susan Hansel
- Lisa Sieverts
- Russ Thomas
- Bert Wingerson
- Rob Germeroth
- absent
  - Bob Lenox
  - Maury Collins
  - Sandy Mackenzie
- Residents (possibly incomplete list)
  - Karen Tolman
  - Barry Tolman
  - Tom Tolman
  - John Smith
  - Laurie Smith
  - Tom Murray
  - Linda Cates
  - Mike Cornog
  - Al Stoops
  - Max Nunnemaker
  - Rick Church
  - Betsey Church
  - Kathy Schillemat
  - Dave Birchenough
  - Mike French

**Meeting called to order at 11:10 AM**

**Going out to bid with the projects next week, this will be the last public meeting before that.**

## **History**

- Town Meeting 2013 funded architect's drawings with goal of fixed price contract for Town Meeting 2014

## **Town is now working on Bidding for projects**

- 2 parts
  - Library Basement
    - Design/Bid/Build process
    - This is a simple process
    - Will select a local contractor
  - Town Hall and Library exterior
    - Construction Management approach
    - Have selected Ingram Construction
- During December, will manage both bid procedures
- Expect to have bids by January 9th
- Will present Costs at Caucus

## **Intro of panel**

- architect Paul Hemmerich is not able to attend
- Jeff Trexler, structural engineer
- John Waite, Mechanical Engineer
- Ingram Construction
  - Jeff Ingram
  - Steve Ingram
  - Scott Lencioni

## **Overview of what has been done this year**

- original scope
  - water mitigation at Town Hall
  - renew floor support structure
  - level floor
- Structural engineering report showed more problems

- racking and tilting
  - deficient roof support
- Mechanical engineer inspected HVAC
  - Town Hall furnace
  - Town hall ventilation
  - Library cooling
- Construction Manager selected, who will
  - Recommend cost-effective construction methods
  - Acquire bids from sub contractors
  - Manage the construction

### **Jeff Trexler overview**

- tilting and racking
  - At first visit, noticed the roof framing had a sag
    - this was not in original scope
  - and that wall was leaning
  - The lean, roof trusses sit on posts, as the wall tips, puts extra stress on the posts.
    - we have increased risk of failure, with NE wind and heavy snow
  - The whole rigid structure of the building is tipping mostly to the south, some to the west
    - this only accounts for some of the lean
  - Building is also racking, no longer square
    - this means that leveling is not enough
    - have to address east end to pull wall back up and add sheathing
  - and add stabilizing bracing in the roof to keep it straight and plumb
  - we're not seeing racking at the west wall
    - because of the "extra" wall at the storage closet, adds stiffness at the west end
    - This means we can't really shrink the storage closet
  - Not planning to add diagonal bracing, just handle it with the sheathing
  - Note that racking and tilting leads to MORE racking and tilting
  - life-safety issue
    - yes, there is a life-safety issue

- So we have added exterior diagonal bracing outside for this winter
- moisture
  - proposing concrete wall inside the rubble foundation
    - as barrier
  - In November, saw lots of moisture coming in
  - add drainage in the crawl space floor and moisture barrier and slab
  - and perimeter exterior drainage
- floor
  - currently have original hand hewn beams
  - old posts
  - added newer posts, with a poor method
    - these are rotting
  - remove the poor posts
  - the good timber beams currently sit on granite posts
    - remove granite posts
    - and have 3 posts per span instead of two
    - rough sawn posts
- roof trusses
  - offset from floor trusses, no idea why
  - each has a center hanger rod, except for the west end truss
  - at some point, they nailed 2x to each purlin
    - south side 2x6, north side 2x8
  - today building code snow 63 lbs per square foot
    - the south ones only handle 36 lbs
    - the trusses are only handling 20 lbs
      - this is where the bowing comes from
      - making assumptions about grade and species of lumber and steel rods
      - chestnut timbers
  - Recommendation
    - we don't have to meet current building codes
    - but if you leave as is, you should remove snow load
      - and we don't want the Sexton to have to do this
    - so plan to reinforce, but how much?

- 50 lbs?
  - 63 lbs?
- If we go to 63 lbs, we would have to add reinforcement in the interior of the building, which would greatly change the interior
- Questions
  - will concrete foundation against rubble be structural?
    - yes
    - stabilizes the rubble
  - DaveU
    - Ingram is telling us to replace the rubble foundation
    - We plan to do a lot of work on the east end
      - replace the foundation there, no matter what, under east wall and north wall to connector
      - replace existing 4' stud wall so that we can bring new concrete well above current top, it's too close to the ground
      - remove clapboards, add skin of plywood, and put back clapboards
  - What about the connector?
    - during construction, disconnect the connector
    - have to do this in order to bring the walls back to vertical
    - So may have to cut back 4 inches
  - Drainage
    - most water coming from east wall
    - we're creating a boat with the foundation height concrete
    - Water is washing outside water through the foundation, there is what looks like a delta in the crawl space
    - and water table is only about 18 inches below
    - have to have drainage system under the slab to take that water to daylight
    - if we leave the rubble foundation, can't dig close to it, because the soil is part of the foundation
      - Committee's original direction was to keep the rubble foundation for preservation reasons
      - Maintain the cut granite capstones, nice finished stonework

- we will be picking the building up off the capstones
  - we propose raising the capstones and shimming between the bottom and the top of the foundation (whether it's rubble or a new foundation)
    - so no matter what, you'll continue to see the granite capstones on the outside
- Dance floor
  - maintaining spring?
  - Planning on not changing the performance of the floor, but hard to predict exactly what will happen when we add the new supports
    - JeffT doesn't think the "response" will change
- Insulation and ventilation
  - defer to John Waite
- Making the room bigger (Rick Church)
  - We do sometimes go over the Fire limit
  - Nelson is bigger than it used to be
  - Worried about Town Meeting
  - JeffT
    - The choice to remove the storage wall would increase space
    - but you would have to then strengthen the west wall
    - Roof truss at that end sits on the storage wall
      - We can deal with this, we will reinforce that truss
      - but how to prevent future racking?
    - Remove the stage?
      - Lisa says Folklore needs it
      - Susan says all presenters need it

### **John waite overview**

- HVAC
  - currently heated by propane furnace in the storage closet
  - The return is wood, very carefully made!
- furnace
  - Plan is move the furnace down below and add new ductwork under floor and registers along the walls and in the floor (wooden registers) to supply heat

- No airconditioning but did ask for ventilation
  - with the duct work, could tie in fans to bring in 1600 cubic feet of air per minute
    - 10 diffusers, compared to the current 3
  - bring in air from north side, as close to the ground as possible
- this method would prepare us for air conditioning in the future
- Return air
  - use the storage closet, hole in floor where furnace sits now
- Your current boiler is good, 92% efficient
  - has a bit of rust
  - you should have a technician look at that
  - so currently, we are planning to use this furnace
  - it moves about 1600 cfm
- Questions
  - why not bring air from crawl space?
    - too musty
  - we already have a problem with noise, will fans be noisy
    - The fans will much quieter than the current furnace
  - exhaust into the ceiling?
    - we will exhaust high, at the old wood stove exit
  - How to add airconditioning
    - you'll have all the ductwork
    - you'd add an airconditioner outside and a coil inside
      - probably another \$4,000 (guess)
      - there is a limitation from the 1600 cfm
    - code says if your building is above 4.5 tons, you have to add an economizer to blow 55 degree air in
  - once you start cooling, is the lack of insulation a problem, will we get condensation inside the wall cavity?
    - feeling is that the air conditioning will be humidify
    - and blow more air in than I'm pushing out
  - the fan solution will work with the windows open
    - yes
    - and you could have controls to give you many options

- just have to be careful not to bring in ventilation AND heating
    - controls will handle this
  - ventilation will be on a timer so it cannot be left on
- Library Basement
  - 3 rooms
    - storage
    - archive
    - meeting
  - dehumidifying
    - get “whole house dehumidifier” in the current mechanicals room
    - goes on whenever humidity is over 60%
  - current library furnace has no controls for the basement
    - so one option is to add a zone for the basement
      - \$3000
  - another option is add a pellet stove
  - John recommends a heat pump for the Library basement
    - new heat pumps work down to 13 degrees below zero
    - \$4000
    - and you get air conditioning “for free”
  - But you told me that the Library uses window air conditioners
    - with a bigger heat pump, you could air condition BOTH top and basement library
    - doubles the heat pump cost
    - but would halve the heating cost for the library
    - and it will dehumidify the meeting space, too
  - and you could use the heat pump and add in the Town Hall
    - variable refrigerant system could take dancer heat and send it in to heat the library
    - This is what John Waite recommends
  - and lots of rebates available
- questions
  - who has a heat pump?
    - PSNH uses it in their own buildings
    - Nashua apt building

- Eppingham Library is also looking at it
- Town Hall
  - you have perfect south facing roofs for solar
  - you could generate the electricity you need to heat these buildings
  - and generate electricity to sell back to PSNH
  - You could get one big heat pump, or one for the library and one for the town hall
- Question
  - do we need insulation in the walls?
    - TBC thinks cost/benefit isn't there
  - what about rapid heating for dances
    - heat pump doesn't deliver quite as fast
    - furnace delivers 110 degrees
    - heat pump delivers 92 degrees
    - You'd schedule it to get the heating going a bit faster, would only need an extra hour

## Ingram

- we are the newest member of the team, on for 10 days so far
- We are currently uncompensated
  - will be paid after Town Meeting
- We have worked with you before
  - Church foundation
  - this is a simpler project
  - we have done many projects like this
- CM process
  - pre construction
    - where we are now
    - we are quickly coming up to speed
    - today's meeting is useful to learn more
    - our role now is learn, and provide feedback when asked on cost and constructability
    - once we get a bid set of documents
      - we'll put it out for bidding
      - goal is to get the best person

- goal is to get to Guaranteed Maximum Price
  - this contract is different from normal GC
    - normally we say \$250K and that's what we get
    - with CM, we say there is a GMP
      - in the bid phase, try to get 3 prices on each phase of the work
        - excavation
        - painting
        - construction
        - etc
        - looking for local contractors
      - analyze the numbers
      - try to decide what is the best value
        - often, but not always the lowest bid
        - looking at their exclusions to make sure everything we need is there
      - then we come back with all the proposals, divided into divisions
        - concrete, with recommendation
        - etc.
      - we come to agreement
        - TBC
        - Selectboard
        - Ingram
      - then have a GMP
        - means that we may end up doing the work for less than the GMP
          - thru efficiencies and luck and good buying
          - if we are under, it reverts back to the owner
          - and you can't pay more than the GMP
  - construction
    - superintendent on site full time

- schedules
  - work to code
  - OSHA compliant
  - maintain detailed cost information
    - shared weekly with the TBC
    - completely open book at all times re cost and schedule
    - if we can see that we are on track for costs, we can make intelligent decision to increase scope (like buy bigger heat pump)
  - Scott Lencioni will be our project manager
    - support to the field, esp. the superintendent
    - also liaison to engineers and architect
    - weekly or biweekly job meetings
    - following costs
    - writing change proposals
      - this even happens with GMP
      - if there is a significant change
    - at the Ingram office but available at all times
    - makes the schedules
  - post construction
- Questions
  - how long Town Hall out of commission
    - mid April to beginning of August

## Funding

- have \$200K+ in Capital Reserve
- recommending against bonding
- we have some grant opportunities
  - applied to LCHIP, hope to hear soon
    - but we are up against 74 applicants this year
    - asked for \$100K in matching grant
  - Putnam Foundation application
  - have received \$10,000 mooseplate grant to fix the windows, so this will happen even if nothing other work gets done
- Fundraising Committee

- Think we have enough to at least address the urgent issues

### **Dave Birchenough**

- story about local provisioning of materials
- their CM, 10 years ago, said I have to get it from Manchester
- but we saw that Hamshaws was able to come in with the best price
  - recommends that someone from the TBC goes to Hamshaws directly
- And Hamshaws responsiveness was amazing, same day delivery
- Steve Ingram
  - we estimate quantities of everything we think we will need
  - we'll send that materials list, and we'll send it to Hamshaws, Perkins, LaVallee – all local
  - we won't go to Home Depot

### **Priscilla reminds us that the Town Hall was built by farmers, on beer**

### **Dave Upton**

- Acknowledge that we still have alternatives to discuss,, some of this may have to happen all the way up to April
- Issues
  - Leaving rubble foundation or replacing it
    - Ingram speaks to the problems of the 1-sided concrete wall
      - there isn't a "side" to the concrete form to manage the tremendous pressures from the wet concrete
      - the backside is the rubble foundation
      - have to pour footing first, not matter what
      - then erect 1-sided wall
        - 8 inches away
        - and the rubble foundation is wavy
        - so start where the rubble foundation is furthest out
        - so sometimes it is 8" thick, sometimes 18" thick
        - the forces of the concrete want to blow out or lift out
      - very labor intensive to build the form
      - requires a lot of concrete, much more than for a straight new wall

- benefit
    - more water proofing on the outside
    - the 1-sided wall allows water to travel through the rubble and then you stop it
  - and you could still use the granite capstones
  - costs?
    - twice as much, at least, for 1-sided wall
- Rick Church speaks in favor of replacing the rubble foundation with the new concrete foundation
- Barry Tolman says no one looks at the rubble foundation, so votes in favor of new concrete foundation
- TBC wants to use rough sawn lumber where possible
  - currently calling for rough-sawn posts
  - but for the joists and reinforcing of joists, using dimensional lumber
    - can't get nail gun nails long enough to use rough-sawn for the joists
    - adds a lot of cost to use rough-sawn there
  - currently, there is a sag between the beams
    - so problem of only contacting the floor at the centers
    - so there is a constructability issue
    - existing timber beams are deteriorating at the lower side
      - have to avoid nailing into the lower, more deteriorated side
  - rough sawn is not graded
    - for JeffT, has to be conservative with allowable stresses
    - also not kiln dried
      - so it will move as it dries
      - and wet it has less strength
  - JeffT
    - hangers are set up for 8" wide
      - rough sawn won't fit the hanger
    - now material is cheap and labor is expensive
      - in the old days, it was the other way around
- heat pump

- Most of JohnW work is the same whether you use heat pump or gas furnace
  - GMP is for defined scope of work
    - you can have alternatives that add or deduct to GMP
    - lots of alternatives can make the bid process cumbersome
      - we have to group the alternatives logically
    - some alternates are standard
- solar
  - DaveB
    - there is a fundraising campaign in addition to town support
    - think their will be donations for alternative energy
    - how to go forward with it
      - DaveU says hard to fit in now
    - we ask JeffT about roof support for PV
      - if you do it parallel to the roof, it's good
      - snow slides right off, with unobstructed eave
      - but if you want to elevate on brackets, that is bad, snow will collect
    - TomT is worried about reroofing
      - because 40 year shingles last about 12 years
- insulation
  - ingram
    - temple town hall
    - walls were original plaster
    - debate about whether to insulate
      - changes teh building science
      - changing the dew point within the wall
    - decided not to insulate the plaster wall, Rick Monahon
    - we did spray foam the foundation walls
  - DaveB asks if we have an energy auditor on the team
    - no
    - He says there are local experts
- spray foam insulation under the floor deck
  - DaveB wonders why do this and not do the walls

- and it's expensive
  - it does help protect against moisture
  - but if moisture comes down from the top, wood could deteriorate and we would never know
- DaveU is concerned that we cover up all the historic joinery
- we are leaning away from spray foam
- ingram
  - insulate the concrete slab
  - insulate the new foundation walls
  - better ventilation
  - ductwork will make it more "temperate" down there
- Bert says Linda Willett says don't add insulation to buildings of this age
- concrete slab
  - JeffT
    - you have to protect your moisture barrier
    - currently, the plastic has gaps
    - concrete will protect the vapor barrier
      - and you don't want to pierce it at all
  - JohnW
    - radon
    - the more you seal up an underground space, the more it will concentrate in other areas
    - should probably be tested?
      - but nobody lives at the Town Hall
- The crawl space will be leveled

#### **questions**

- Thank you for doing this

**Motion to adjourn from Susan, second by Russ, all in favor at 1:25 PM**