
CONSTRUCTION PROJECTS COMMITTEE
THURSDAY, MARCH 5, 2009
NASHUA HIGH SCHOOL NORTH LECTURE HALL
6:00 PM

A meeting of the Construction Projects Committee was held at Nashua High North on **Thursday, March 5, 2009**. Mr. Dowd called the meeting to order at **6:07 p.m.**

Present: Alderman McCarthy (6:11), Alderman Tabacsko, Mr. Dowd, Mr. Hallowell

Also Present: Mr. Mealey, Mr. Smith, Mr. Vaughan, Mr. Teeboom,
Dick Henry & John Gaston from Jordon Institute

Approval: Jordon Institute Contract

Mr. Mealey

We do have Dick Henry from the Jordon Institute here to answer questions, but I'll let Shawn introduce it.

Mr. Smith

At our last meeting there was a motion not to exceed \$25,000 for Jordon Institute to do a building envelope assessment and to look for capital alternatives for us. They did this and it would be a little over \$23,000 plus reimbursables (copies, mileage, etc.) I thought we'd have Dick Henry or John Gaston provide a summary of the proposal and go from there.

Mr. Henry

Basically we would do a typical detailed assessment of the building (Fairgrounds Elementary School). It's clear there are some piping and distribution issues in the building. Then we would develop alternative solutions and run the financial models on those alternative solutions to give you a return on investment. What we're doing a little differently on this project than others, is really taking a look at the fuel alternatives. There may also be some solar thermal applications.

Then we would work with you looking at various funding options. That changes daily due to the stimulus package and we would work with you to determine the best choices for you. We calculate that there's somewhere between \$150 and \$200 million coming into the state in the next 2 years, so it's worth spending some time looking at that. There are also renewable energy bonds, a series of federal tax credits coming in the package. There will be a chunk of money coming to the city and there's great flexibility on how they can spend those monies.

So we'll do the assessment of the building, take a look at the heating alternatives and then work with you to try and figure out which funding alternatives make the most sense.

Alderman Teeboom

What products will you deliver?

Mr. Gaston

The full assessment report is what we would deliver, which would give the assessment of the building itself and the fuel alternatives.

Mr. Henry

It's broken down first by description of the existing shell envelope and the equipment and everything we look at in the building. Then we go through an assessment of alternatives on where we think there's the best result package we can deliver. There are probably 15-20 different things that would relate to a specific building. Then we estimate the cost of those things. We do the estimated savings by each measure.

The capital costs and savings are put into a model that we've developed that does a lot of different things. It gives us priority listings of the measures. In schools, we usually see that air sealing and insulation in schools has a very quick payback period of around 3 ½ years on average.

Alderman Teeboom

My next question is about the cost comparison. When you give us an estimate back, is that a current turnkey cost estimate or is there going to be an option (for mechanical system) that quadruples the cost?

Mr. Gaston

That's a good question. Unfortunately, owners get caught in this problem of using engineer's estimates vs. contractor's estimates. I was hired by the Jordon Institute because I ran a large construction company and understand those games. That's the reason why we do our own estimates and have them verified by contractors. The other thing we learn from the bidding process at the assessment stage is that each contractor perceives the scope of work differently. We get back variations from each contractor on how they would approach that scope of work.

Alderman McCarthy

It's important to understand that on this project we have selected a design firm and a construction firm. As we go on I think we're going to want to make sure that you guys are working with them.

Mr. Henry

That's an added bonus to us actually. They will make sure that our estimates are correct.

Mr. Gaston

At the last meeting I came away with the knowledge that there were these large costs associated with geothermal and it was prudent to take a look at some of the other alternatives that we've encountered as we've looked at over 150 school buildings in the state. It seemed to make sense to offer up these options and look at both capital and life cycle costs.

Alderman Teeboom

But you look at the options and give us the costs... are these turnkey costs?

Mr. Hendry

Well, since you've got a contractor on board, I assume they're going to be giving us costs to verify our estimates. And they're going to be responsible to you as the owner that they're providing you with accurate information.

Alderman Teeboom

No I'm asking about your product. You talked earlier about giving us estimates. When you come back 90 days from now and give us these options, is each going to be a turnkey cost?

Alderman McCarthy

The problem we had is that we started out with estimates on what were essentially the mechanical components only. It basically included what the mechanical system cost was if that piece were being done during new construction. So when we go to look at the actual cost of doing that in Fairgrounds, there are substantial phasing issues that require demolition and reconstruction, which wind up costing substantially more than the original bid. I think what Alderman Teeboom is asking is, are the numbers we see at the end of this be stand along as the total construction and not a piece of construction?

Mr. Gaston

I understand. Most of what we do is retro fit type work. It's much more difficult to estimate new systems in an existing building because you're dealing with existing conditions.

Alderman Teeboom

So, what's the answer?

Alderman McCarthy

The answer is yes.

Alderman Teeboom

Next question is, you mention in your proposal that you sign a different separate contract for project implementation oversight.

Alderman McCarthy

That's a separate issue that we'll discuss when the time comes. Again, we already have a contract for some of the construction oversight from Turner.

Alderman Teeboom

What is the background of the personnel mentioned in this who will work on this job?

Mr. Gaston

The actual team is made up of a Project Coordinator, who is usually an entry level engineer. The next level member is a Project Manager, who is the essential guy on the team responsible for making sure that the data is accurate, we have drawings and specs wherever possible and coordinates all activities. The next higher level is a Program Manager (Gary O'Connell) who used to be the State Energy Manager. Then Dick and I are present for the brainstorming activities for any major assessment activity and we review and verify the report before it goes out.

Alderman Teeboom

Are you going to give us progress reports during this 90 day period?

Mr. Gaston

You will get weekly progress reports from the Project Manager for the prior and upcoming week. And we can attend your monthly meetings if you'd like. The Project Manager interacts with the client continuously. It's a very interactive process.

Mr. Hallowell

Going back to the estimates... you have your own estimates as to the retrofits in general and then we have the "real" numbers that Harvey and Turner might provide. I'd like to see an opinion or some comparison of the estimates that you feel we should see and the estimates that we're getting from the people that we've hired to do that work. I know there's a multiplier, but I'm not sure exactly what that is.

Mr. Gaston

Maybe a clearer way to explain the estimates is that it's a fair cost estimate. If Harvey is a lot higher than we are, we'd appreciate the opportunity to dig in and find out why. We've done a lot of these and I wouldn't expect that they'd be that different.

Mr. Henry

My sense on this is that Harvey and Turner have spent a lot of time thinking through the geothermal side of things, and we don't really want to reinvent that wheel. What is more germane is looking at the gas CHP, pellet and chip alternatives and see where they stack up on the capital and operating cost in comparison.

Mr. Hallowell

Alderman McCarthy, does this contract that we're going to be giving them fall under the umbrella that we're going to be paying Harvey some percentage of this? Is it under that or not?

Alderman McCarthy

I think what happens is any work that's required by Harvey to coordinate with them will come under Harvey's current scope of preconstruction services. It's not out of this amount of money, it's out of the money set aside for preconstruction for Turner and Harvey.

Mr. Gaston

Is the contract that you have with Harvey a Construction Management Contract?

Alderman McCarthy

I believe it is, but at the moment it's simply a time and materials contract for preconstruction.

Mr. Gaston

Is it fixed price, or are they on hourly on the preconstruction side?

Alderman McCarthy

It's not fixed price, it's time and material I think. Is that right Shawn?

Mr. Smith

I want to say we received a lump sum for preconstruction services from them, but I'll double check.

Alderman McCarthy

Getting back to the alternatives, we have had some discussion about the pellets earlier. When we look at alternatives other than geothermal or gas, before we go too far with that I think there ought to be a policy discussion with this committee. Because I would be reluctant to move to a different fuel source in the scheme of things like pellet, which is not what we're doing elsewhere... and that gives us some specific costs and requirements at this school that we don't have anywhere else. So if you get to the point where you feel that something other than either geothermal or tighten the building up and do it with a natural gas system is the best alternative... before we scope that out too far we ought to have a discussion about that.

Mr. Gaston

Can you share with us your concerns about the bio-mass side? Because I agree with you and don't want to go down a road that has already been decided against. But our sense is that when you look at the capital investment...

Alderman McCarthy

My particular concern with it is that we have a lot of very good experience with natural gas. The supply is solid and generally not interruptible, does not require us to take deliveries, etc. We have it in 16 other facilities. Wood pellets... I have concerns over the long-term economics of it if it catches on. If it remains a novelty I think we can afford it. If it becomes a mainstream technology then I think wood price may be as volatile as other energy forms and that is just a subject for concern.

Mr. Gaston

Do you think wood prices are going to be more volatile than natural gas prices?

Alderman McCarthy

I don't know. I know that natural gas it's in for a penny and a pound

Mr. Gaston

We're asked that question a lot. It is a growing technology. We're in a different place than we were 5 years ago. We saw pellets as something quite promising because you're so close to the Jaffrey Plant so you don't have the transportation questions. We think it's worth taking a look at, and we think the capital differences are very substantially less than your geothermal option. As far as the volatility goes, my sense is that heat is always going to take precedence over electricity. And that our wood supply is bountiful within a reasonable distance from here and you and I will be long gone before that really becomes a major issue. Study after study after study seems to confirm that. So I would encourage you to let us take a look at it.

Alderman McCarthy

I think you should. I think there's also some concern for us on ash removal.

Mr. Gaston

In the schools that we have seen using ash, is that they're actually saving money on ash because they're using it as a lime replacement on their athletic field. If you have all turf fields that eliminates that option. When you go to pellets, the ash content is about .6 of about 1%. So the volume of ash that you would be dealing with is so small as to be almost trivial. It's different with chips where the volume is a little higher.

Alderman McCarthy

The only other comment I had is in section 3 of the proposal... funding options. I think in terms of actual capital funding and straight financing I suspect we'll go that as we do everything else... with geo bonds and whatever cash we put to it from reserve funds. So I don't want to spend a lot of time discussing different financing arrangements so much as any additional funding sources.

Mr. Gaston

That's fine. And I assume taking a look at rebates, you would be interested in. When you're doing a project like this that is almost totally energy focused, I guess the question becomes do you want to take a look at a municipal lease purchase option as opposed to a traditional school bond?

Alderman McCarthy

Probably not, because on a bond we get a 30% reimbursement on principal from the state.

Mr. Gaston

And you don't think you would on the lease purchase?

Alderman McCarthy

I don't know.

Mr. Gaston

I'll ask Ed about that.

Mr. Hallowell

I still certainly want to see the scenario of wood pellets, but I too would caution against going too far with them. The other thing, in reading what I thought might be pertinent sections of the stimulus package... there were energy bonds if you were doing some kind of project. I believe they were interest free.

Mr. Gaston

Right. There are 2 types of zero interest bonds, which are for that component that qualifies for renewable energy.

Mr. Hallowell

So if we did a natural gas boiler, that wouldn't qualify, but wood pellet or geothermal would.

Mr. Gaston

If you look at page 2 of our handout, you can see that by switching from all electric heat to wood and taking into account their current electric needs... on a per sq. ft. basis they reduce their greenhouse gas emissions by 42%. Wood is generally seen as being carbon neutral.

Mr. Hallowell

Do you know whether government entities will be able to give their credits to companies and therefore we'd get a benefit for that?

Mr. Gaston

There's a whole set of different markets here.

Mr. Smith

There was a bout \$17 billion that did go into various types of energy efficiency in the stimulus package. \$3.2 billion of that was for energy efficiency and conservation block grants, which I think Dick was talking about. We're having Stacy Hynes take a look at it.

Mr. Gaston

Our understanding on those block grants is that they're similar to other block grants you've gotten with a lump sum given to the city under very broad guidelines for energy efficiency.

Mr. Vaughan

When you're comparing the cost alternatives, would you be comparing the life cycle costs?

Mr. Gaston

Our model includes both first year capital costs and life cycle costs. In addition we have inflater indexes we can put in for energy inflation. We're not predicting, but we can run 2 or 3 different scenarios.

Alderman Teeboom

In the Merrimack School, if you discount the 28,000 sq. ft. addition, how much money was put into the HVAC component?

Mr. Gaston

We're trying to get those numbers. We're working with one of the Project Supervisors and he's been working on that for a couple of months, but we don't have those figures yet. If you won't hold me to the numbers, we think the numbers are around \$8 million.

Alderman Teeboom

Then how many years would it take to pay that off?

Mr. Gaston

This was an interesting project because some of the costs were renovation and some of the costs were directly related to energy. This school was going from electric to something, anyway. So we did not calculate the cost of an oil system as an energy efficiency measure. What we calculated was the return on investment on the delta between the hypothetical oil system and the eventual wood system. That turned out to be about a \$500,000 difference. They had to build the building that was the wood chip heating plan. So it wasn't the boiler costs, it was the building the building costs that were quite expensive. Even so, when they floated the initial bond, they estimated about an 8 or 8 1/2 year payback on that delta difference. By the time they were about 1/2 way through the project, because of the increase in the cost of oil it was down to 4 years. Now with oil going back down again, it's around 3 1/2.

Alderman McCarthy

What we try to do with old buildings that we've renovated is bring them back to about a 20-30 useful life. And if you look at the per sq. ft. cost of doing that to invest in the building, this building was \$100-110 per sq. ft. If you look at construction costs today it would be about \$150. So if the energy cost is offsetting that back to even \$90 or \$70 a sq. ft. then we're saving money. And I think we have to look at the cost we're putting in to regain life in the building and are we wining vs. what we would do for a strict renovation project based on the energy costs?

ALDERMAN TABACSKO MOVED TO RECOMMEND TO THE JSSBC TO ADOPT THE PROPOSAL AS PRESENTED BY THE JORDAN INSTITUTE AT A COST OF \$23,300 PLUS REASONABLE REIMBURSEABLES.

SO VOTED.

Mr. Mealey

We have 2 invoices from Turner from January and February as well as one for the cost of bring Mr. Mancini in to speak to us.

ALDERMAN TABACSKO MOVED TO APPROVE THE FOLLOWING INVOICES: FROM TURNER BUILDING SCIENCE & DESIGN IN THE AMOUNT OF \$3,564.03 AND FROM R. MANCINI IN THE AMOUNT OF \$1,578.57.

SO VOTED

Mr. Hallowell moved to adjourn. **So voted at 7:05 p.m.**

Submitted by Jacki Waters