DRAFT
MAHS Combined Meeting of the
Sustainability & Building Systems Sub-committees
16 March 2016
Prepared by sub-committee member Jessica Damon

Summary:
We spent time tonight discussing the feasibility of constructing the new MAHS to or above various specific standards. PDT provided insight from other schools they've worked with in terms of what we might consider. We talked more about "stretch goals"- what could lie outside of a basic budget but what we may find very important and want to request taxpayer support. The group is still gathering data on finding the right balance between a highly sustainable building and short and long term costs. Both subcommittees want to be sure to protect taxpayer money in the long term by getting the school built right in the beginning, in the most sustainable way we can afford.

Tonight's agenda:

1. Review/approval of meeting minutes from the February meeting – APPROVED w minor changes.
2. Update from design team regarding energy performance criteria target
    a. Current design team building performance level
    b. ASHRAE 90.1-2015
    c. Maine Advanced Buildings
    d. Other
    e. Stretch Goals – what is reasonable to achieve without being cost prohibitive?
    f. Geothermal
3. Review of construction inspections to avoid 'repeat' issues (DID NOT HAVE TIME)
4. Solar PV Discussion – Revision Energy to present at the next meeting how solar PV could work for the high school.

Tonight's discussion:
Alan, from PDT, will talk on public school performance. Seems that every school has a different set of codes. This project will be build according to the 2015 I-Codes (updates) as the update, which is currently in progress, will be complete by the time we start construction.

Some examples of schools and their environmental/sustainability certifications:

- Harriet Beecher Stowe is LEED certified (w/geothermal)
- MT Blue is LEED Silver. To be LEED Gold, must have PV, and on-site renewables.
- Great Falls in Gorham beat Harriet Beecher Stowe
- 1 in Cumberland is Net Zero & scores 15 points on the Energy Star building scale.

LEED Silver is obtainable, but Gold may be a stretch.

Last 2 schools PDT worked with attained 30% better than baseline of LEED.
Focus less on energy cost and more on energy use intensity. We could say we want to do "40-50% better than that"…
Ian said that to beat ASHRAE 90.1 2010 by 20% may be equal to IECC 2015.

Current high school uses 56 kBtu now ($1.04/sq ft) and PDT thinks they can get to 32 (.6o/ sq ft).

Alan can survey some Net Zero high schools and provide us some data on costs, etc for comparative analysis…would like to have a graphical summary of what the Dept of Ed will support and see how much higher above a Net Zero school would look like to understand what we really want and how we might pay for it.

We reiterated that one of the best things we can do in terms of energy efficiency is have a tight envelope.

What about Energy Star rated buildings?
Ian talked about a140,000 sf building in Maine (program adjusts for climate), says the new number is 32.

Massing and percent glazing will be first steps in Design process.
EUI 32 is within 15 points of Net Zero and is at the 100 percentile of the Energy Star program.

Cost of geothermal covered 50% by Dept of Ed (last 3 schools Alan said they spent about $0.5 million each and state covered half.) Geothermal wells are expensive, so usually designed to cover some capacity but not the coldest or hottest days (supplemental/gas would do that).

Water Fixtures. If we want to go beyond the standard then we need to collect rain or grey water. Discussion about rain water collection system for irrigation of ball fields and the associated costs and maintenance.

EUI (the energy performance of the building) is what is driving this conversation. The energy target will generate a list of what we want then Design can put numbers to those items.

Referendum may be June 2017 instead of November 2016.

Geo exchanger as an alternate? If we can't afford it today, can we set things up so that when today's equipment is worn out in 25 years, it's ready for geothermal?
Envelope, lighting upgrade, PV…enhancements
We are being limited to 140,000SF so if each redundant system takes up more floor space, then maybe geothermal is good as it takes up less space.
Whatever we decide, it must have a good payback over time (Dept of Ed wants to see a </= 10 year payback)

Central vs Distributed Heat Pumps…pros and cons of both..Brunswick school is a distributed system.
Chris talked about if we go with distributed systems, he'd prefer hallway infrastructure vs in-classroom to minimize classroom disturbances in the event of maintenance or troubleshooting.

Alan will get a spreadsheet together with data Jane requested and also "extra" items other schools have asked taxpayers to help fund.
Ian advocated that having an awesome building is basic; additionally a few extras/upgrades

Alan made updates to the OPR, tracked changes in red, and he will plan to continue to do so at each meeting.

HOMEWORK:
Review OPR and U & E values and designs.
NEXT MEETING:
13 April 5:30-7:00