PERMANENT BUILDING COMMITTEE
SCHOOL BUILDING COMMITTEE SUB-COMMITTEE
MEETING MINUTES

DORE + WHITTIER

Project:	Clinton Middle School	Project No:	202000640305
Subject:	School Building Committee Meeting	Meeting Date:	01/30/2024
Location:	ZOOM	Time:	6:30 PM
Distribution:	Attendees, Project File	Prepared By:	E. Grijalva
MSBA Module:	4- Schematic Design		

Meeting Agenda

1. Call to Order & Number of Voting Members
2. Geothermal & PV Systems Discussion/Vote
3. COA Carriage House Designer Services Award
4. Other Topics not Reasonably Anticipated 48 hours prior to the meeting
5. Public Comment
6. Next Meeting
7. Adjourn

Name	Affiliation
Steven Meyer*	PBC Member- Superintendent
Chris McGown *	PBC Chair
Michael Moran*	PBC Member
Michael Ward*	PBC Member- Town Administration
Brian Delorey*	PBC Member
Shane Mcarthy	SBC Member - Teacher
Trip Elmore	DWMP- Project Director
Elias Grijalva	DWMP – Assistant Project Manager
Eric Moore	LPA|A – Principal in Charge
Peter Caruso	LPA|A – Project Manager
Sean Brennan	LPA|A – Project Architect
Kevin Seaman	Seaman Engineering
David Fontaine Jr	Fontaine Bros – CEO
Jamie Blume	Fontaine Bros- Project Executive
Beth Paulson	Fontaine Bros – Project Manager
Chelsey Mutrie	Fontaine Bros – VP of Precon.

***PBC Voting Members**

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Item No	Description	Action
22.1	**Call to Order:** 6:33PM meeting was called to order by PBC Chair, C. McGown with 5 of 7 members in attendance.	Record
22.2	**Geothermal & PV Systems Discussion/Vote** **Schematic Design Schedule update** provided by P. Caruso 1/12/24 Schematic Design (SD) drawings and specifications to cost estimators. 2/01/24 Cost Estimates are due. 2/02/24 Cost Estimate reconciliation 2/06/24 SBC/PBC presentation (cost estimate) 2/09/24 Submit presentation and Cost Estimate to the Town 2/13/24 All-Boards Meeting 2/20/24 SBC vote to submit Schematic Design (SD) Package 2/23/24 Submit DESE & SD Package **S. Brennan** summarizes the base system in Schematic Design (SD) and a potential geothermal system option. **Packaged Air Source Heat Pump** (Base system design) • Dedicated Outdoor Air Systems (DOAS) • Packaged HVAC Systems • Inverter Variable Speed Compressors • Energy Recovery (ERV) Wheels or Core • Hot Water or Electric Back-up Heat **Heat Recovery Chiller/Heater** (Base system design) • Generates both chilled water and hot water simultaneously. • Operation down to 0F with 130 F water • Multiple 30-ton modules (Est. 150 ton+) **Geothermal System Types** • **Traditional** – normal well field; takes up a lot more land. • **Proprietary** – pyramidal drilling; preserves the land and provides greater development options in the future.	Record

Geothermal Cost Comparison

	Est. Current System (ASHP only)	Est. Geothermal System (partial)	Delta
Mechanical Scope (Direct Cost Only)	$11,400,000	$11,650,000	$250,000
Geothermal Wells and Site Work	$0	$3,000,000	$3,000,000
Subtotal	**$11,400,000**	**$14,650,000**	**$3,250,000**
Mass Save Rebates (275 Tons)	($220,000) $800/ton	($553,000) 90 tons @ $4500/ton 185 tons @ $800/ton	($333,000)
IRA (est. 34%)	$0	$ (4,981,000.00)	$(4,981,000.00)
Estimated Total Const. Costs	**$11,180,000**	**$9,116,000**	**$(2,064,000.00)**

- The annual heating energy consumption is estimated to be 190,800kWh/year.
- The Annual Heating Energy Cost is +/- 190,800kWh/year (.22cents) = $42,000.00

System	Annual Cost	Median Service Life
Air-sourced heat pumps	$16,790.00	15-20 years
Ground Source Heat Pumps	$10,494.00	20-25 years
	$(6,296.00)	(5-10 years)

- The savings of using geothermal equipment to be approx. $6,300/year
    - A geothermal system is expected to be 25-50% more efficient than an equivalent air source system.

T. Elmore emphasizes that nobody has received actual grants from this Inflation Reduction Act (IRA), so there is a little risk to consider, but it is published. The check would be issued about a year after the building is complete and you would need to meet the criteria, which is not fully understood at this point.
M. Moran asks, does anyone know if this system is running in other schools?
T. Elmore replies, there are several schools, for example Lexington and Cambridge
M.Moran asks, has anyone heard any comments and how it's working?
K. Seaman mentions that early installations, particularly in Westboro, utilized a system with standing column wells to extract water from the ground. While this method was efficient and

saved the need for numerous boreholes, there were notable failures due to the early stage of implantation.
M. Moran asks, how many wells would there be?
K. Seaman replies, the proposed design will be a partial geothermal system, which means about 20 wells estimated at 700 feet in depth.
S. Meyer mentions, the tax credit for geothermal only applies to projects which construction begins before January 1, 2025.

A motion was made by B. Delorey and 2nd by M. Moran, to proceed with Geothermal for the Schematic Design (SD) submission.

Discussion: None; **Roll Call Vote**: B. Delorey (Y), M. Moran (Y), S. Meyer (Y), C. McGown (Y); **Abstention**: M. Ward (Experienced technical difficulties)

Photovoltaic System Update presented by S. Brennan.

Estimated available square footage for photovoltaic (PV) cells is the following:

- Roof PV array | 28,830sf | +/-400kW array*
- Parking Lot Canopy PV array | 7,350sf | +/-100kW array*
- TOTAL | 36,180sf | +/-500kW array.
    - Anything over 500kWh will require battery storage.

PV system on New School:

- 500kW estimated generation = 405,000kWh/year
- 405,000kWh/year x $0.22/kWh = **$89,100/year***

Budgetary Numbers:

School Roof (~400kW)	$1,400,000
Parking Lot Canopy (~100kW)	$ 350,000
Parking Lot Canopy Framing	$ 750,000
PV System Budget	$2,500,000

*Estimated Town Share After Incentives (30%): $2,500,000 x 70% = $1,750,000

M.Moran asks, does the unused power go back to the grid?
T. Elmore replies, yes, it goes back to the grid and then you get a credit swap.
M.Moran asks, will National Grid take it?
T. Elmore replies, you will have to work with National Grid to get them to take it.
S. Meyer asks, is there any negative impact in terms of the energy code that we need to meet?
S. Brennan replies, no there is not.

A motion was made by S. Meyer and 2nd by M. Moran, to have the PV system as an add alternate.

Discussion: None; **Roll Call Vote**: B. Delorey (Y), M. Moran (Y), S. Meyer (Y), C. McGown (Y); **Abstention**: M. Ward (Experienced technical difficulties)

	S. Brennan provides an updated rendering of the project. (refer to project website to watch the latest rendering)	
22.3	**COA Carriage House Designer Services Award** A motion was made by S. Meyer and 2nd by M. Moran, to accept SSV Architects qualifications and move forward with a price proposal. **Discussion:** None; **Roll Call Vote**: B. Delorey (Y), M. Moran (Y), S. Meyer (Y), C. McGown (Y), M. Ward (Y); **Abstention**: None	Record
22.4	**Other Topics not Reasonably Anticipated 48 hours prior to the Meeting:** **Discussion:** None	Record
22.5	**Public Comment:** **Discussion:** None	Record
22.6	**Next Meeting:** 02.06.2024 – CMS Building Committee Remote Meeting No.022 @6:30PM – via Zoom 02.13.2024 – All Boards Meeting – In-Person; Location: CMS Cafetorium 02.20.2024 – CMS Building Committee Remote Meeting No.023 @6:30PM – via Zoom **Discussion:** None	Record
22.7	**Adjourn: 8:16 PM** a motion was made by S. Meyer and seconded by M. Ward to adjourn the meeting. **Discussion**: None; **Roll Call Vote:** B. Delorey(Y), C. Magliozzi (Y), S. Meyer(Y), M. Moran (Y), M. Ward (Y), C. McGown (Y); **Abstentions:** None All in favor, the meeting is adjourned.	Record

Sincerely,
DORE + WHITTIER
Elias Grijalva
Assistant Project Manager
Cc: Attendees, File
The above is my summation of our meeting. Please contact me for incorporation into these minutes if you have any additions and/or corrections.