

Fremont City Schools
HVAC COMMITTEE MEETING
Tuesday, February 24, 2009
11:00 a.m.

Attending:

Dave Chambers
Jim Fails
Red Haslinger
Gordon Keck

Larry Logsdon
Dr. Traci McCaudy
Curt South
Matt Sudhoff

Bob Stan
Dr. Kim Theller
Jim Wagner
Mark Weltin

Guests Attending:

Dave Reinbolt Clint Schwartz, CAI

1. Dave Chambers presented a hand-out concerning the system, operating and replacement costs of the various HVAC systems. The information provided showed what the Fanning-Howey estimates would cost the district. Based on what the district can afford, geo-thermal was eliminated as an option. Fanning-Howey operating cost data reflected energy cost only (not maintenance costs), in present-day dollars.

2. Clint Schwartz, PE, with Controlled Air Inc., presented a Power Point on Chilled Beams and the pros/cons as it relates to our needs for a school building. The presentation covered both active and passive beams.

a. Passive Chilled Beams - usually used with displacement ventilation or an under-floor system. A sample displacement chilled beam was brought to the meeting for members to view.

b. Active Chilled Beam – induction unit, constant volume

c. There may be some placement consideration when designing large space areas where chilled beams would not be used (other HVAC source).

d. An OSFC variance will be needed for the Chilled Beams system.

3. A question/answer period followed the Chilled Beams presentation.

4. Fanning-Howey and the school district will proceed with a recommendation to the Board of Education on a Chilled Beams HVAC system. Committee members were thanked for their time and input.

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1. HVAC Costs
2. PowerPoint Presentation, Controlled Air, Inc.

cc: BOE

Chris Moore, Touchstone
Madison Dowlen, OSFC

HV AC System Costs

	Estimated Data Variable		Totals	Totals minus OSFC Financed
VRV	2,614,500	249,000	2,863,500	373,500
VRV with Geo	2,988,000	747,000	3,735,000	1,245,000
Chilled Beam	3,237,000	249,000	3,486,000	996,000
Chilled Beam with Geo	3,610,500	747,000	4,357,500	1,867,500
Geothermal	3,237,000	747,000	3,984,000	1,494,000
Square Feet in Project OSFC Financed	124,500		2,490,000	

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VRV

VRV with Geo

Chilled Beam

Chilled Beam with
Geo

Geothermal

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HVAC Operating Costs

	Average Low Average High Mid-Range			60 Year Mid-Range above Geo
VRV	144,420	159,360	151,890	2,016,900
VRV with Geo	124,500	136,950	130,725	747,000
Chilled Beam	130,725	139,440	135,083	1,008,450
Chilled Beam with Geo	118,275	130,725	124,500	373,500
Geothermal	118,275	130,725	124,500	373,500
Square Feet	124,500			

HV AC Replacement Costs

	15 years	20 years	25 years	30 years	35 years	40 years	45 years	50 years	55 years	60 years	Totals
VRV	0	466,500	0	0	0	466,500	0	0	0	466,500	1,399,500
VRV with Geo	0	466,500	0	0	0	466,500	0	373,500	0	466,500	1,773,000
Chilled Beam	0	40,000	233,250	0	0	40,000	0	233,250	0	40,000	586,500
Chilled Beam with Geo	0	40,000	233,250	0	0	40,000	0	606,750	0	40,000	960,000
Geothermal	311,000	0	0	311,000	0	0	311,000	373,500	0	311,000	1,617,500

HV AC Costs

	System	Operating	Replacement	Totals
VRV	373,500	2,016,900	1,399,500	3,789,900
VRV with Geo	1,245,000	747,000	1,773,000	3,765,000
Chilled Beam	996,000	1,008,450	586,500	2,590,950
Chilled Beam with Geo	1,867,500	373,500	960,000	3,201,000
Geothermal	1,494,000	373,500	1,617,500	3,485,000

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