



Oak Park Elementary School District 97

970 Madison ▪ Oak Park ▪ Illinois ▪ 60302 ▪ ph: 708.524.3000 ▪ fax: 708.524.3019 ▪ www.op97.org

TO: Albert G. Roberts, Superintendent of Schools

FROM: Therese M. O'Neill, Asst. Supt. for Finance & Operations

RE: HVAC System – New Administration Building

DATE: April 28, 2015

On Thursday, April 2, 2015, Norm and I met with Jennifer and Colby from STR, along with two representatives from dbHMS, the electrical/HVAC engineering firm, to review the HVAC system to be installed in the new Administration Building. Attached is a copy of such presentation.

I draw your attention to page 7 – the HVAC system comparison. Following their explanation of the three proposed systems, considerable time was spent reviewing this page. Recognizing the difference in square footage cost between column 2 (air-cooled variable refrigerant flow) and column 3 (ground-source variable refrigerant flow tied to geothermal boreholes), \$15/per square foot, Norm and I believed the solution demonstrated in column 2 was the right approach. Further, recognizing the payback period for geothermal (column 3) was longer than the proposed life of the building gave even more credence to our recommendation of column 2's solution. However, recognizing the value that Ralph Muehleisen from FAC brings to the any discussion of energy, sustainability and acoustics, we reached out to him for comment.

Ralph provided the following feedback:

“You can eliminate VAV from consideration. The VRF (column 2 and column 3) gives superior performance, more adjustability and costs less. Additionally it can serve as a good example of the costs and the capabilities of VRF so we can decide if we want to consider it again for the air conditioning in the classrooms (this VRF is what we were calling the mini-split system in our AC considerations).

The question is whether you want geothermal with VRF or regular with VRF. It's a \$15/square foot difference or about \$330,000 for the 22,000 square foot building. The payback time on the upgrade to geothermal is probably longer than the lifetime of the building because the savings in reduced energy use will not amount to more than a few thousand dollars a year. But, from the overall sustainability standpoint Geothermal is much better. One other consideration though is this: Drilling holes has the same risk as digging a basement – you might run into environmental issues that will slow down construction.”

At the April 14, 2015 Board meeting, we shared this information with the full Board, indicating that given we had a scheduled FAC meeting on April 21, 2015, we would provide the presentation, as well as have the electrical/HVAC consultant present to review all three solutions with FAC members. We, in fact, had such meeting, and a comprehensive dialogue as to the pros/cons of the VRF and Geothermal solutions was conducted due to the VRF system immediately being ruled out as a viable solution. Typically larger office buildings (in the 100,000 + square foot range) provide greater energy savings but a building the size of our proposed Administration Building is unable to render the amount of payback that would warrant the initial investment of \$330,000. It is estimated that the annual energy savings is about \$1,000/year. Both the VRF and geothermal solutions will provide the same sound heating/cooling that we are desirous of having, as well as minimal acoustic interference, and it was recommended by a 6 to 1 vote of FAC members to pursue the VRF solution, rather than geothermal.

Therefore, we would appreciate the Board approving such design at the April 28, 2015 meeting to continue to provide clear direction to the architect on this important component of the Administration Building.

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