

Case Studies – Implementation of GSHP Systems at Impacted Sites

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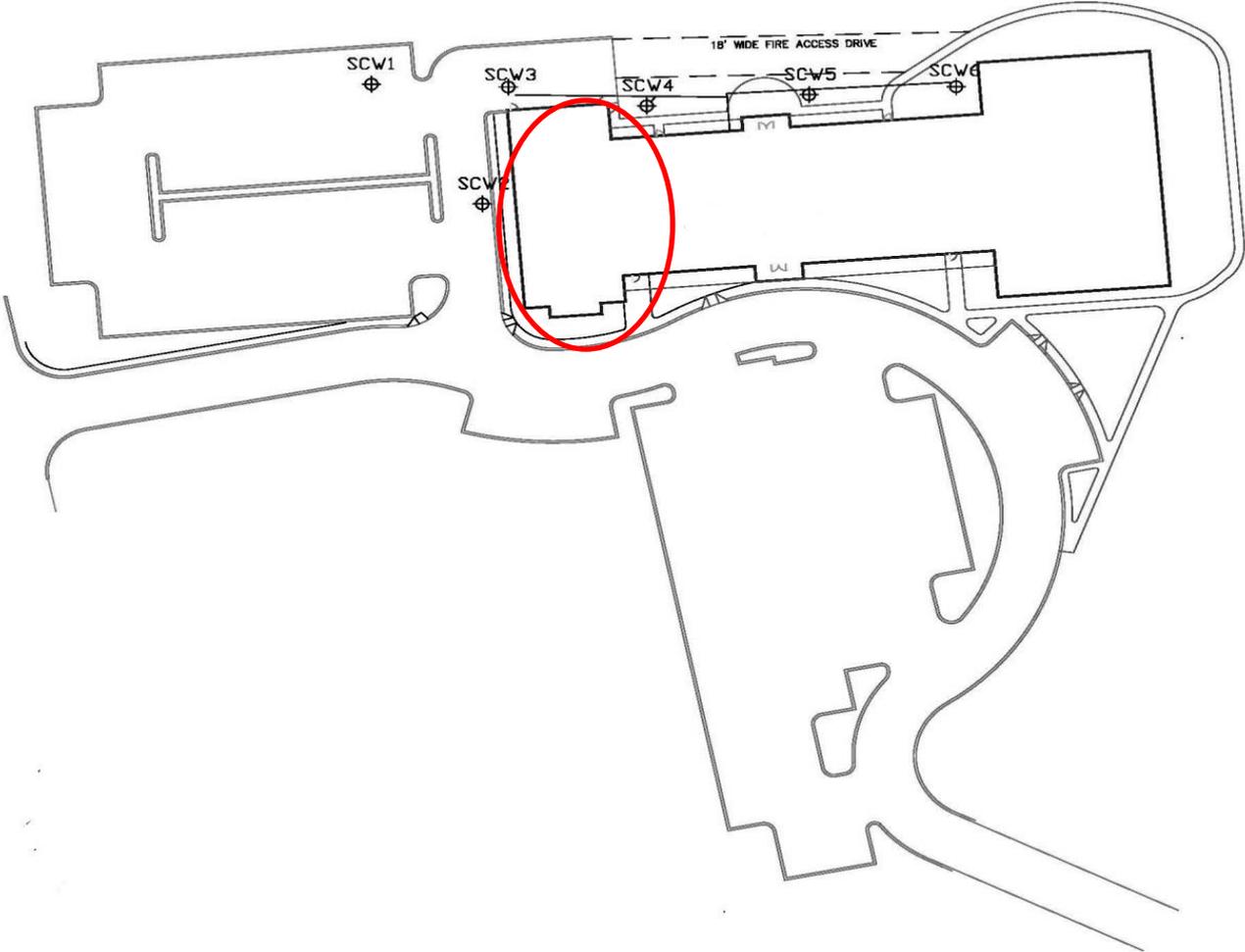


CASE STUDY No. 01- Community Center

1. City developing site as a community center. Building Load is 120 tons.
2. Existing building had a fuel oil leak from underground storage tank.
3. The site is in the MCP and has on-going groundwater monitoring with an activity and use limitation.
4. Oil is present beneath existing building slab and on water table.
5. Bedrock is present at surface at the site.
6. Design for new building includes geothermal heating and cooling using four Standing Column Wells to 1,500 feet.
7. Water from wells designed to discharge to adjacent storm drain.
8. An Environmental site evaluation for the geothermal design was not conducted.



CASE STUDY No. 01



What would you do?

1. Can you install Geothermal at this site.
2. If so, what type system would you recommend.
3. What size system would you need.
4. Do MCP issues need to be addressed.
5. Does a LSP need to get involved.
6. What permits would be required.



Case Study No. 02 – Elementary School

1. School has old boiler fueled by No. 2 Fuel Oil and wants to evaluate installing a geothermal system for heating and cooling.
2. Building load is 125 tons.
3. Existing irrigation well depth is 350 ft produces 20 gpm.
4. Till is located approximately 20 ft. below grade.
5. The School is immediately downgradient from a former drycleaner. School received a partial RAO. PCE concentrations below S-1 and GW below GW-3.
6. The school owns a field adjacent to the school. Field is 200 ft by 300 ft.



What would you do?

1. Would you allow the wells to be installed
2. What permits would be required.
3. Would water testing be required.
4. What notifications would be required.
5. How should the MCP issues be addressed.
6. Would other GSHP types be more appropriate.

Case Study No. 03

1. Developer wants to install geothermal system for his office building on Cape Cod.
2. Building load is 35 tons.
3. Existing well produces 200 gpm.
4. The building abuts a pond but is not part of the property.



Should the Developer Proceed with the System

1. What are the flow rate requirements.
2. Is the well sufficient for the building load
3. What would be the Permit requirements.
4. What other systems would be appropriate.



Case Study No. 04

1. A school is thinking of switching from all electric to geothermal.
2. Building load is 150 tons.
3. There are athletic fields adjacent to the school.
4. There is an abandoned water well on-site (500 ft. 50 gpm)



Is it feasible to install Geothermal at the School

1. Should they investigate trying to use the existing well.
2. Is the well sufficient for the building load
3. What would be the Permit requirements.
4. What other systems would be appropriate.

