

# IPRO 335 GREEN ART STUDIO

## Cost Estimating & Scheduling

CSI Div. No.	Description	Estimated Total Cost Inc. Overhead & Profit
1	General Requirements	\$ 237,536.55
2	Site Work	\$ 442,145.45
3	Concrete	\$ 557,183.47
4	Masonry	\$ 200,696.36
5	Metals	\$ 579,275.05
6	Wood & Plastics	\$ 19,220.00
7	Thermal & Moisture Protection	\$ 216,340.96
8	Doors and Windows	\$ 568,793.25
9	Finishes	\$ 484,805.91
10	Specialties	\$ 66,559.12
11	Equipment	\$ 37,735.98
12	Furnishings	\$ 70,297.20
13	Special Construction	\$ 25,244.00
14	Conveying Systems	\$ 32,654.05
15	Mechanical	\$ 613,406.70
16	Electrical	\$ 583,271.00
17	Geothermal Heat System	\$ 45,400.00
18	Solar and Wind Energy	\$ 404,000.00
19	Green Roof	\$ 98,240.00
20	Green Wall Panels	\$ 510,694.15
<b>Sub Total</b>		<b>\$ 5,793,499.20</b>
Bond & Insurance (1.25%)		\$ 72,418.74
Contingency (%10)		\$ 579,349.92
<b>TOTAL BID</b>		<b>\$6,445,267.86</b>

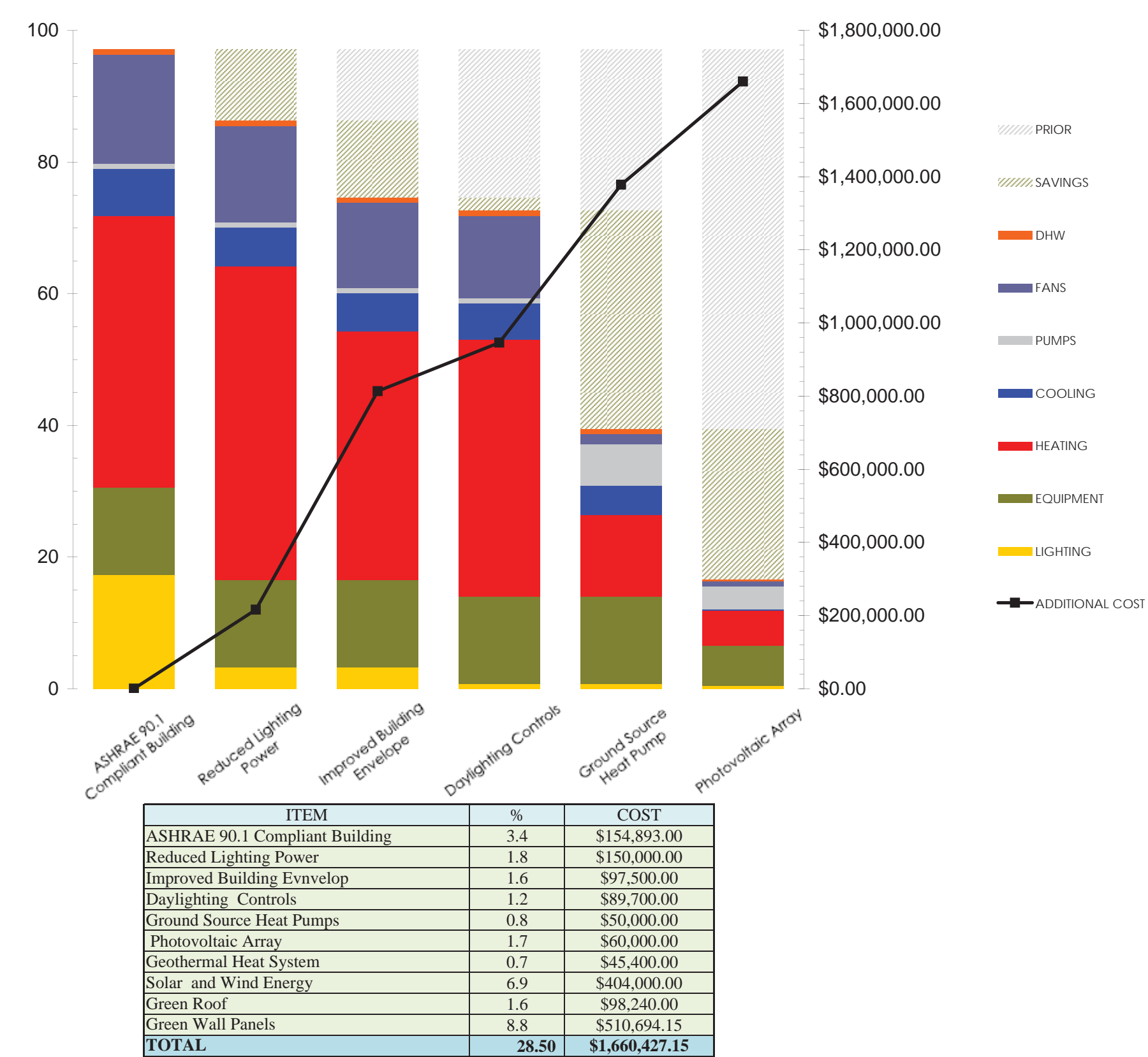
CONSTRUCTION COST			MAINTENANCE COST	
AVERAGE BUILDING COST \$140/SF	\$4,900,000	ESTIMATED RETURN OF INVESTMENT 8-12 YEARS	SIMILAR NON "GREEN"	\$53,200/year
GREEN BUILDING COST \$180/SF	\$6,445,267		GREEN ART STUDIO	\$34,580/year

**SAVINGS/ YEAR**  
**\$18,260**

### GREEN ART STUDIO

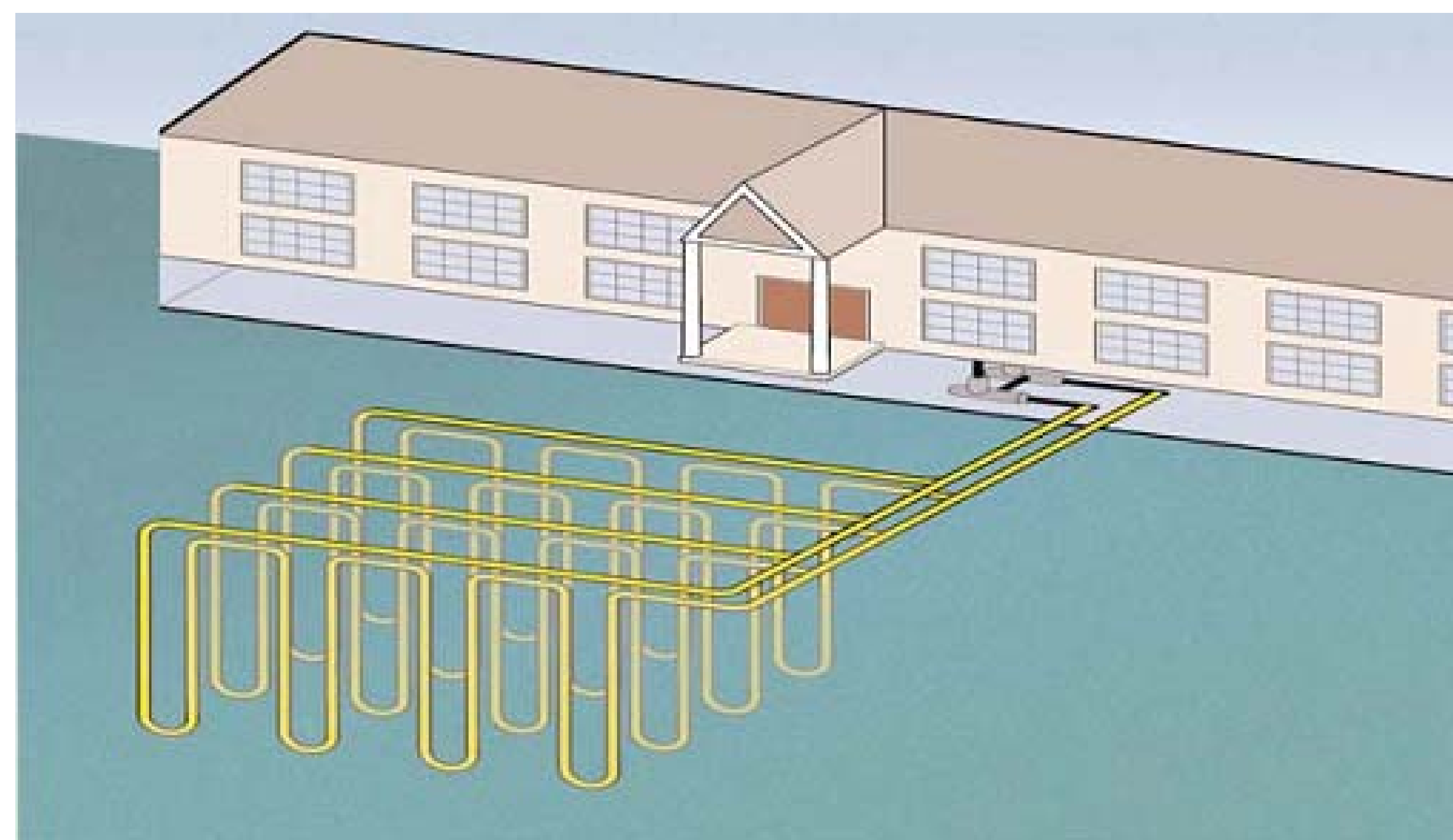
Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish
A1160	Green Wall Panels	6	6	0%	29-Mar-10*	05-Apr-10
A1010	Permits & Licensing	14	14	0%	01-May-09	20-May-09
A1000	Design phase	20	20	0%	01-May-09	29-May-09
A1170	Roof	21	21	0%	26-Oct-09*	23-Nov-09
A1140	Solar Panel Installation	26	26	0%	01-Mar-10*	05-Apr-10
A1150	Green Roof Plants	26	26	0%	08-Mar-10*	12-Apr-10
A1130	Equipment	41	41	0%	25-Jan-10*	22-Mar-10
A1180	Landscaping	41	41	0%	16-Feb-10*	13-Apr-10
A1120	Finishes	42	42	0%	01-Dec-09*	29-Jan-10
A1110	Doors&Windows	44	44	0%	28-Sep-09*	30-Nov-09
A1080	Masonry	60	60	0%	01-Sep-09*	24-Nov-09
A1090	Metals	62	62	0%	23-Oct-09*	22-Jan-10
A1020	Site Work	64	64	0%	01-Jun-09*	28-Aug-09
A1070	Fire Protection	83	83	0%	03-Aug-09*	30-Nov-09
A1030	Concrete	87	87	0%	22-Jun-09*	22-Oct-09
A1060	HVAC	113	113	0%	13-Jul-09*	21-Dec-09
A1050	Plumbing	164	164	0%	29-Jun-09*	19-Feb-10
A1100	Crane Installation	180	180	0%	01-Jun-09*	15-Feb-10
A1040	Electrical	186	186	0%	06-Jul-09*	29-Mar-10

## Cost Estimating & Scheduling



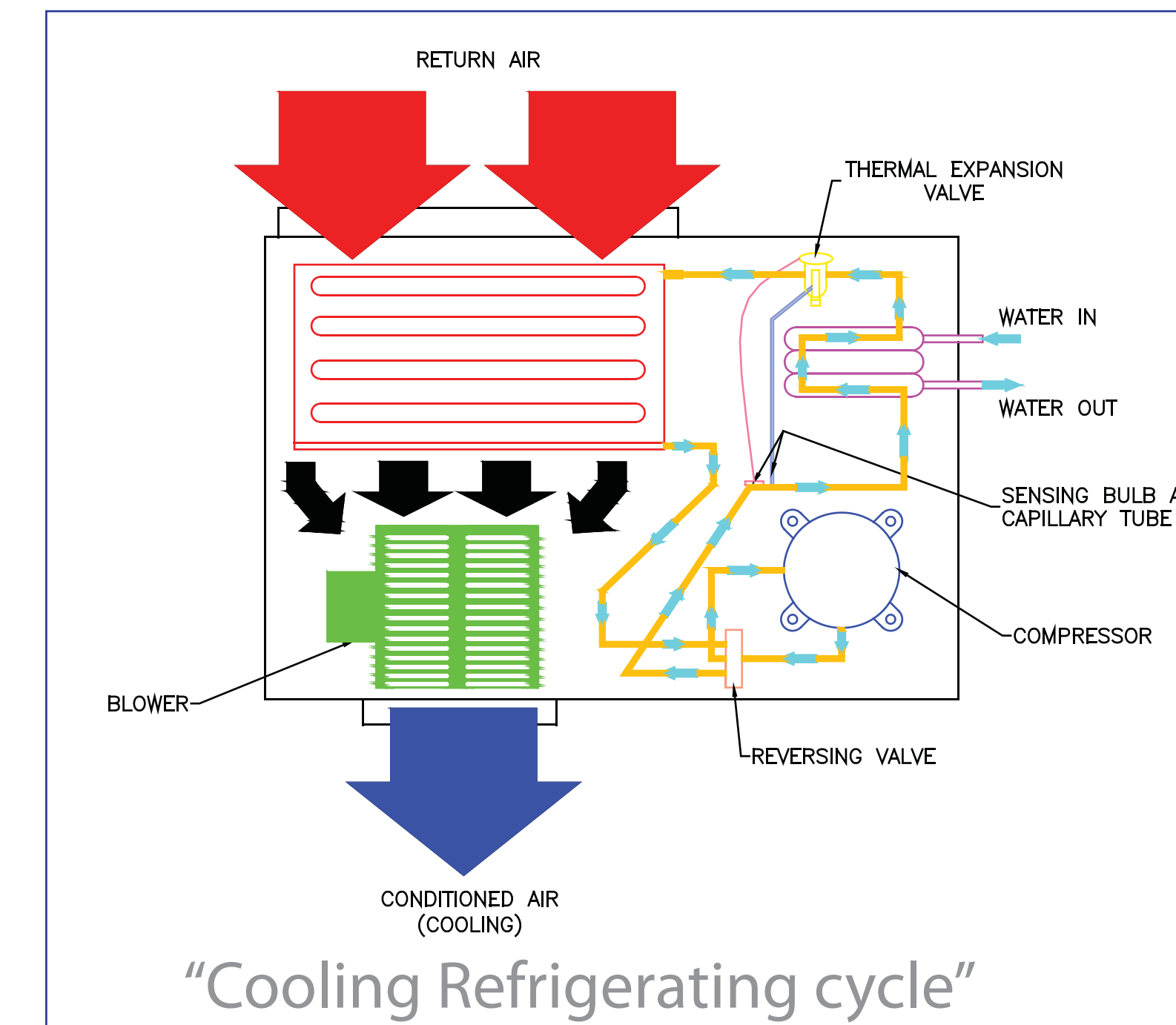
TYPICAL HVAC FLOOR PLAN LAYOUT

### "Closed Loop Vertical Bore Ground Heat Exchanger"

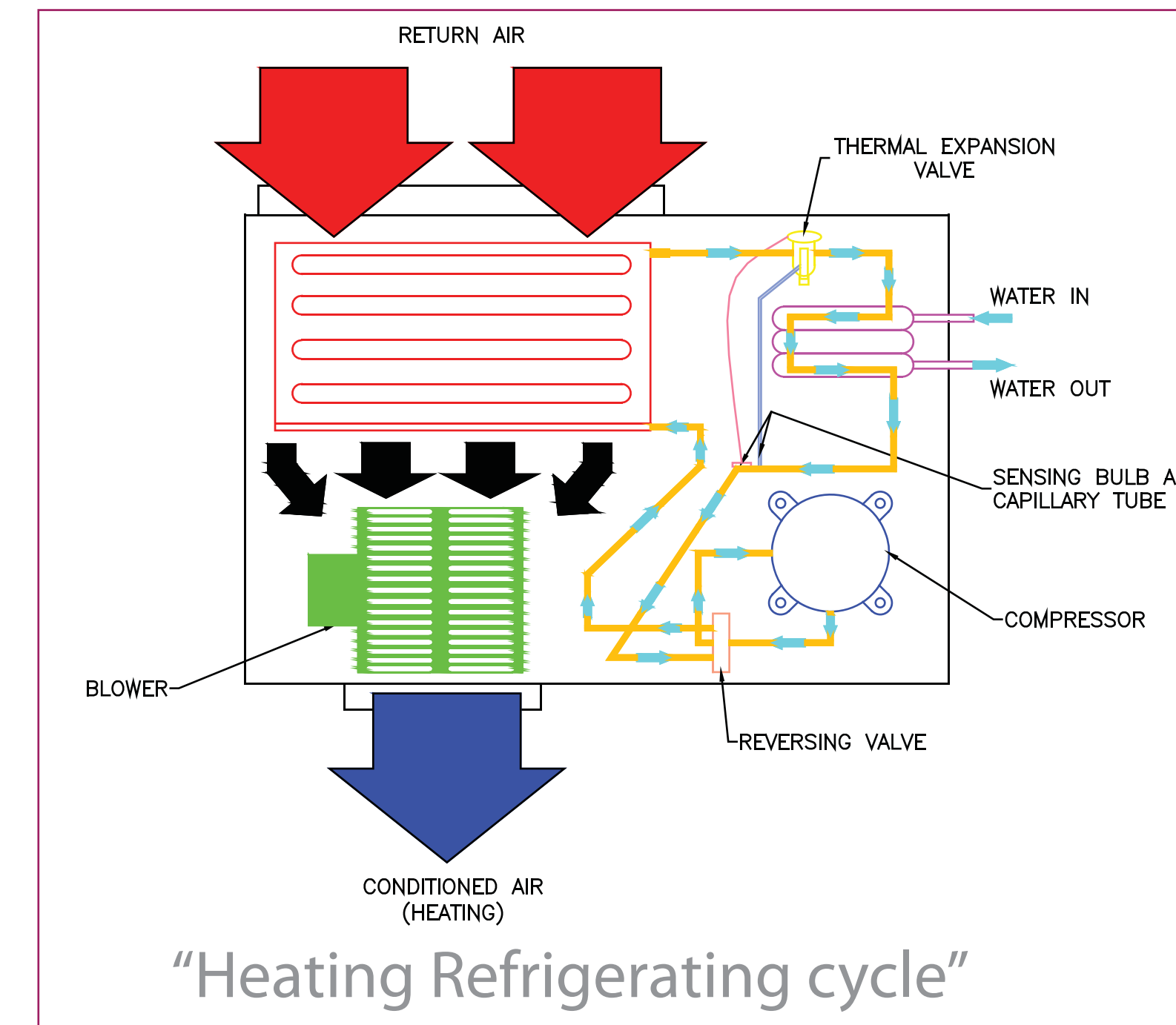


A geothermal heat pump system is a central heating and/or air conditioning system that actively pumps heat to or from the shallow ground. It uses the earth as either a source of heat in the winter or as a coolant in the summer. This design takes advantage of moderate temperatures in the shallow ground to boost efficiency and reduce operational costs.

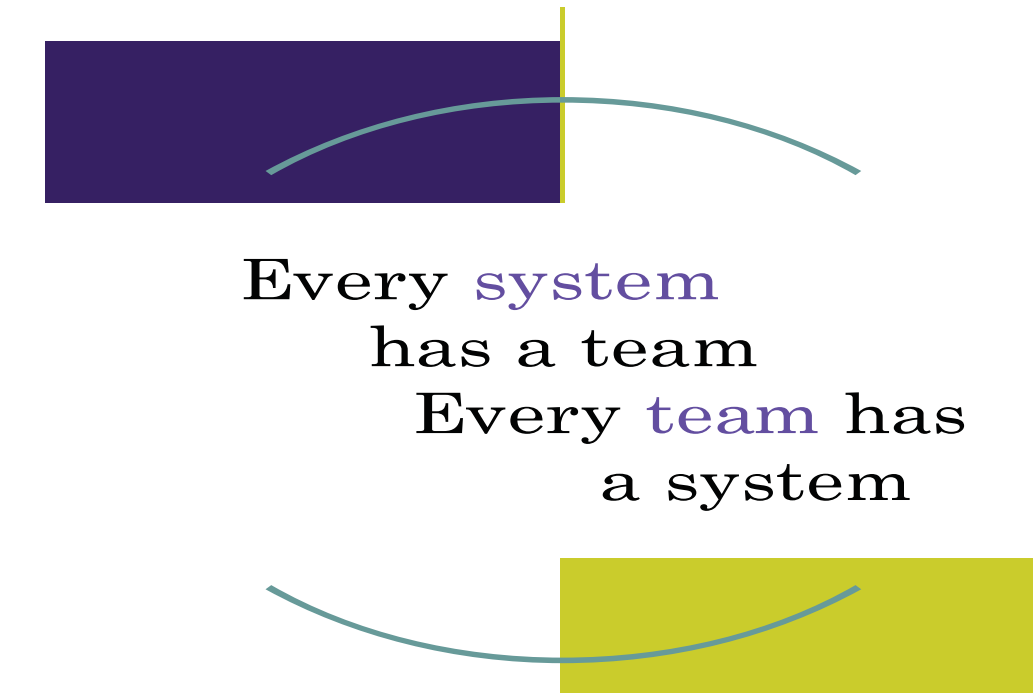
## Heating Ventilation & Air Conditioning



When the wall thermostat calls for COOLING, the reversing valve directs the flow of the refrigerant, a hot gas, from the compressor to the water-to-refrigerant heat exchanger. There the heat is removed by the water and the hot gas condenses to become a liquid. Then liquid then flows through a thermal expansion valve to the air-to-refrigerant heat exchanger coil. The liquid then evaporates and becomes a gas, at the same time absorbing heat and cooling the air passes over the surfaces of the coil. The refrigerant then flows as a low pressure gas through the reversing valve and back to the suction side of the compressor to complete the cycle.



When the wall thermostat calls for HEATING, the reversing valve directs the flow of the refrigerant, a hot gas, from the compressor to the air-to-refrigerant heat exchanger coil. There the heat is removed by the air passing over the surfaces of the coil and the hot gas condenses and becomes a liquid. Then liquid then flows through a thermal expansion valve to the water-to-refrigerant heat exchanger. There the heat is removed by the water. The refrigerant then flows as a low pressure gas through the reversing valve and back to the suction side of the compressor to complete the cycle.



### "Geothermal Heat Pump"



## LEED Rating PLATINUM CERTIFIED

	Points Awarded
Sustainable Sites	12
Water Efficiency	5
Energy & Atmosphere	17
Materials & Resources	6
Indoor Environmental Quality	15
Innovation & Design Process	3
<b>Project Totals (pre-certification estimate)</b>	<b>58</b>

Certified 26-32 points  
Silver 33-38 points  
Gold 39-51 points  
Platinum 52-69 points