

IPRO 314

GREENING AND RE-USE OF QUEEN OF PEACE HIGH SCHOOL FACILITIES

LIGHTING

Background
After meeting with the QoP representatives and visiting the campus, it was noted that the currently lighting in the convent facilities and the gymnasium was out of date and costly to operate. An full assessment of the current fixtures and lamps in the convent and gymnasiums was performed and subsequently a cost versus benefit analysis was executed to determine the utilities saving potential for the school.

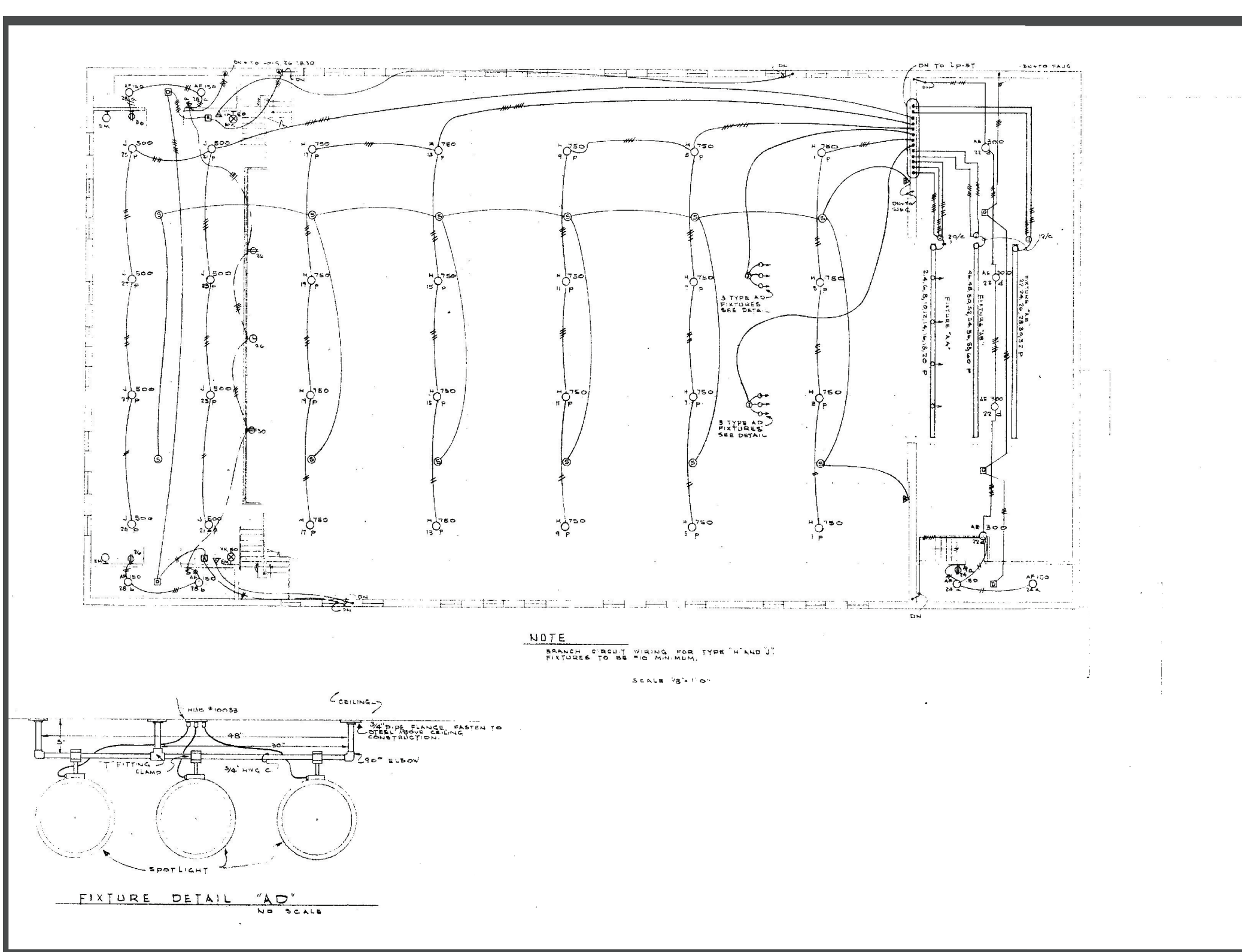


- Objectives**
- Determine the current lighting costs to the school before the retrofit
 - Calculate lighting costs for school after replacement of fixtures and lamps
 - Additional Benefits
 - Determine the total savings the school can expect from year to year

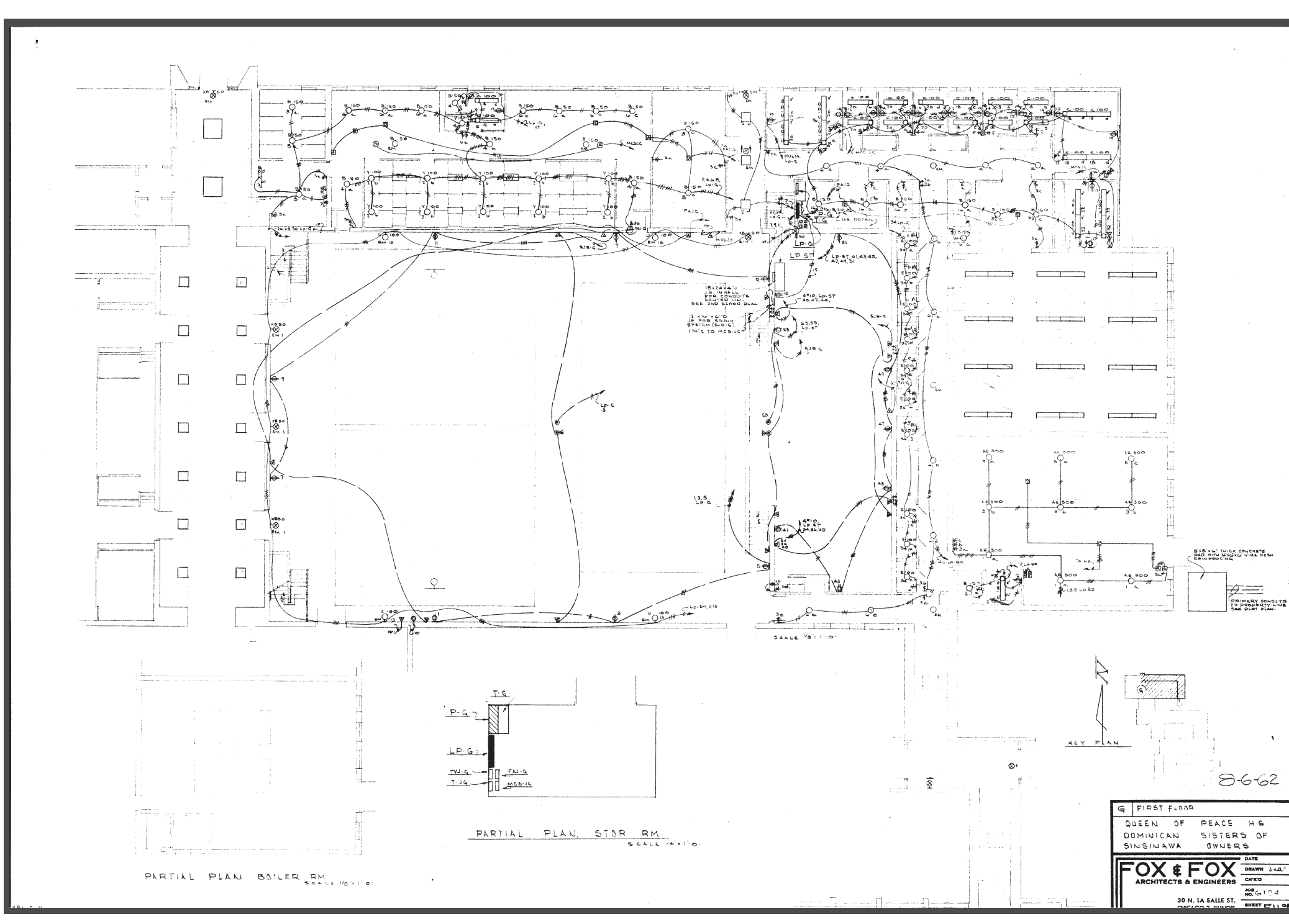
- Methodology**
- Creating an inventory of the schools lighting based on existing blueprints
 - Site visit to access existing lighting conditions
 - Calculating current wattage use and energy cost
 - Replacement of insufficient fixtures
 - Year to year cost analysis (replacement of fixtures)
 - Calculating new energy consumption

- Benefits**
- Commonwealth Edison provides an incentive plan, assisting in offsetting the carbon footprint of Queen of Peace
 - Possibilities of other government and private funding

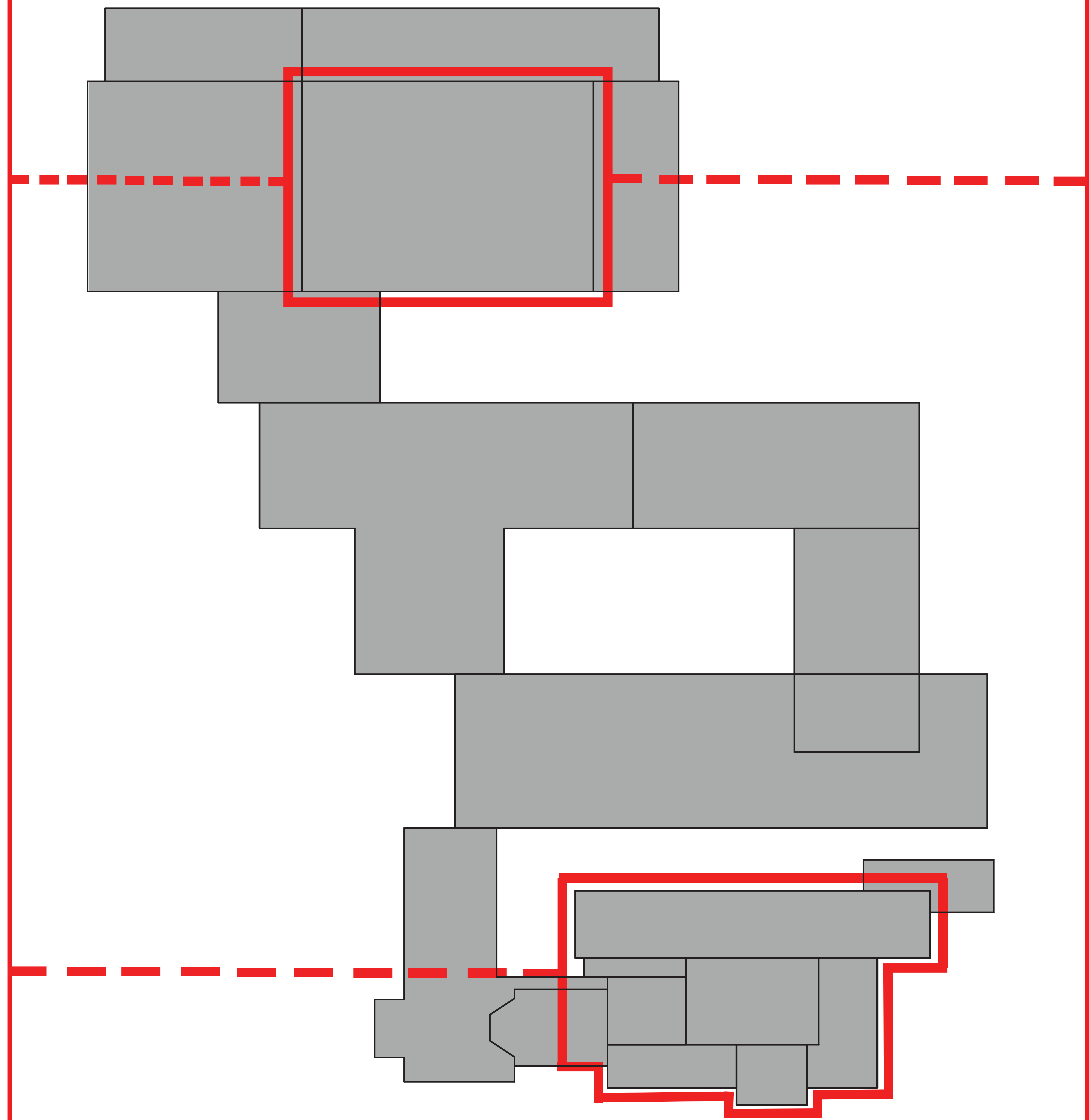
SUMMARY	
Lighting Cost Per Year Before Retrofit	\$17,731.48
Lighting Cost Per Year After Retrofit	\$6,333.68
Lighting Savings Per Year	\$11,397.79
Kilowatt Demand Savings	35KW
Kilowatt Hour Usage Before Retrofit	139,398 kWh
Kilowatt Hour Usage After Retrofit	49,793 kWh
Kilowatt Hour Per Year Savings	89,605 kWh
Number of Fixtures	280
Estimated Project Cost	\$49,616.40
Com Ed Incentive	\$9,147.00
Net Project Cost	\$40,469.40
Carbon Dioxide Emission Reduction	201,612 lbs./Year
SIMPLE PAYBACK	3.55 Years
Return on Investment- 1 year	28.16%
Return on Investment- 5 years	140.82%



Plan Queen of Peace E03 Unit A 2nd fl Plan 1962 Fox and Fox

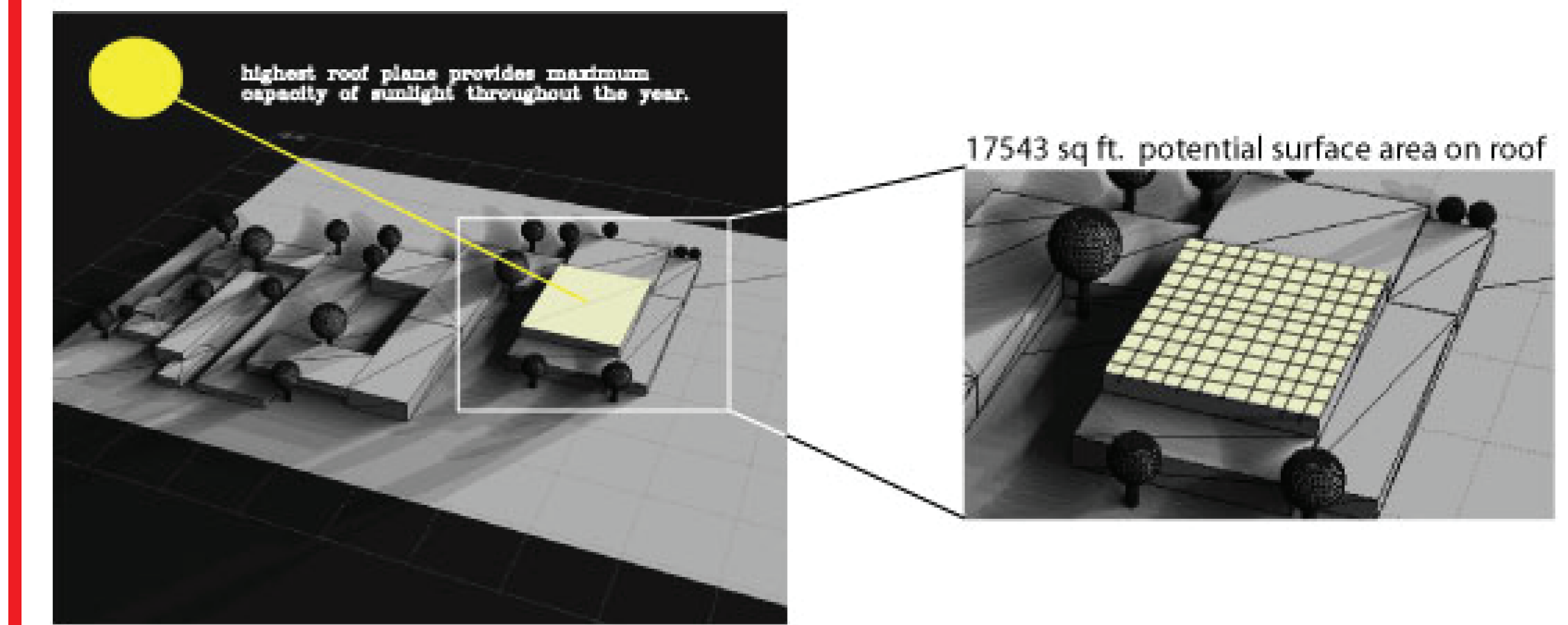


THE PROBLEM POSED AT QUEEN OF PEACE HIGH SCHOOL IS ONE OF SUSTAINABILITY, BOTH PHYSICAL AND SOCIAL. SPLITTING INTO TWO GROUPS EACH ADDRESSES ONE OF THESE ISSUES. THE PHYSICAL ASPECT INCLUDES ASSESSING THE CURRENT LIGHTING, ROOFING AND WINDOWS. THE SOCIAL ASPECT INCLUDES RE-EVALUATING THE USE OF AN OLD CONVENT WING FOR A MULTI-PURPOSE CENTER, TRANSFORMING THE LIBRARY INTO A COMMUNICATION CENTER. THE MAIN GOAL OF THIS PROJECT IS TO DIRECTLY AND INDIRECTLY PROMOTE QUEEN OF PEACE HIGH SCHOOL.

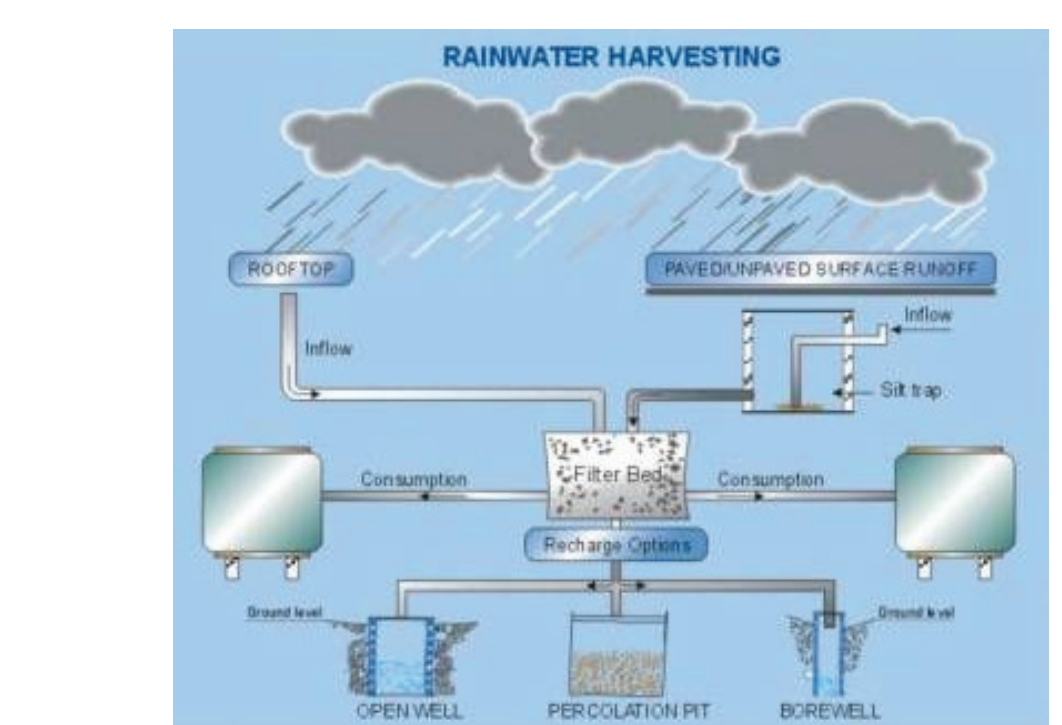
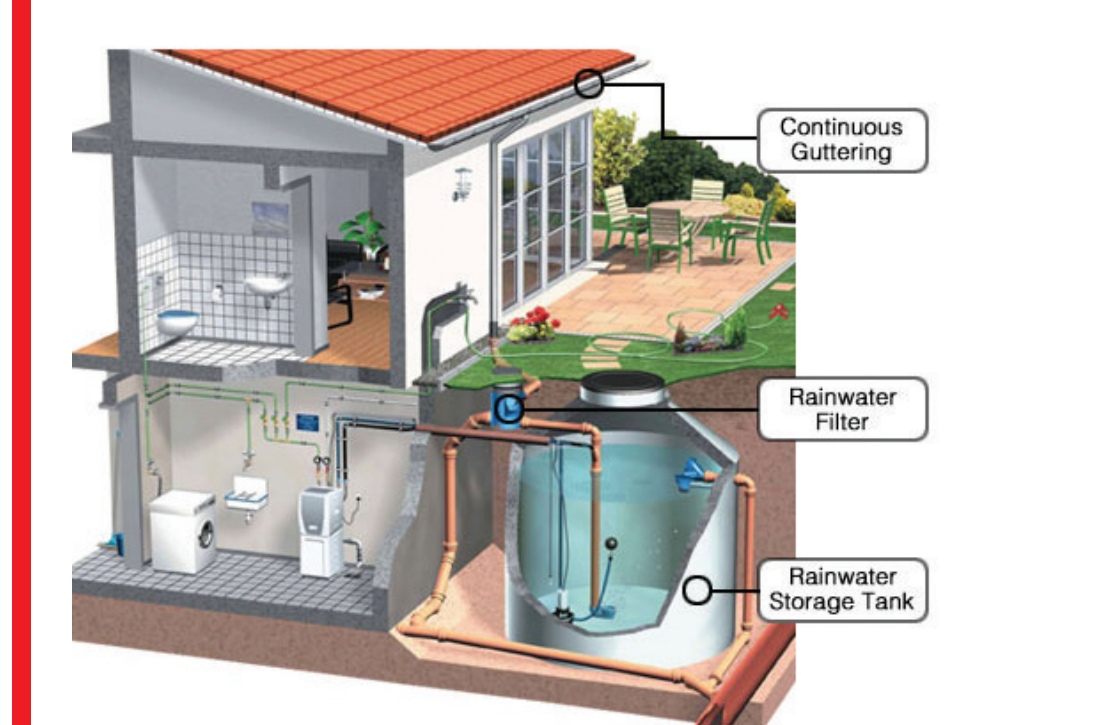
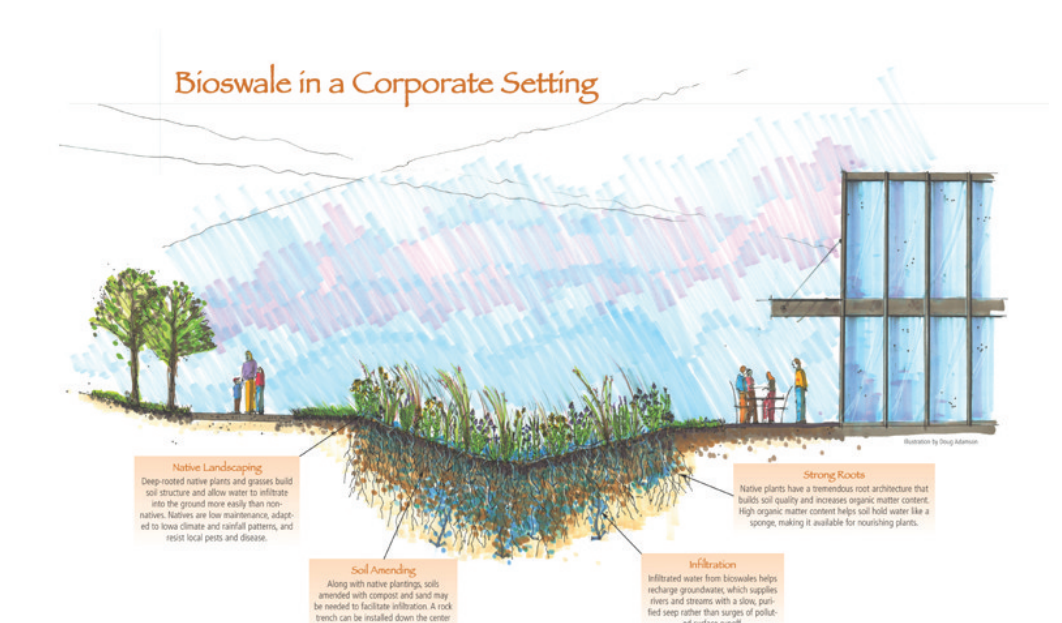
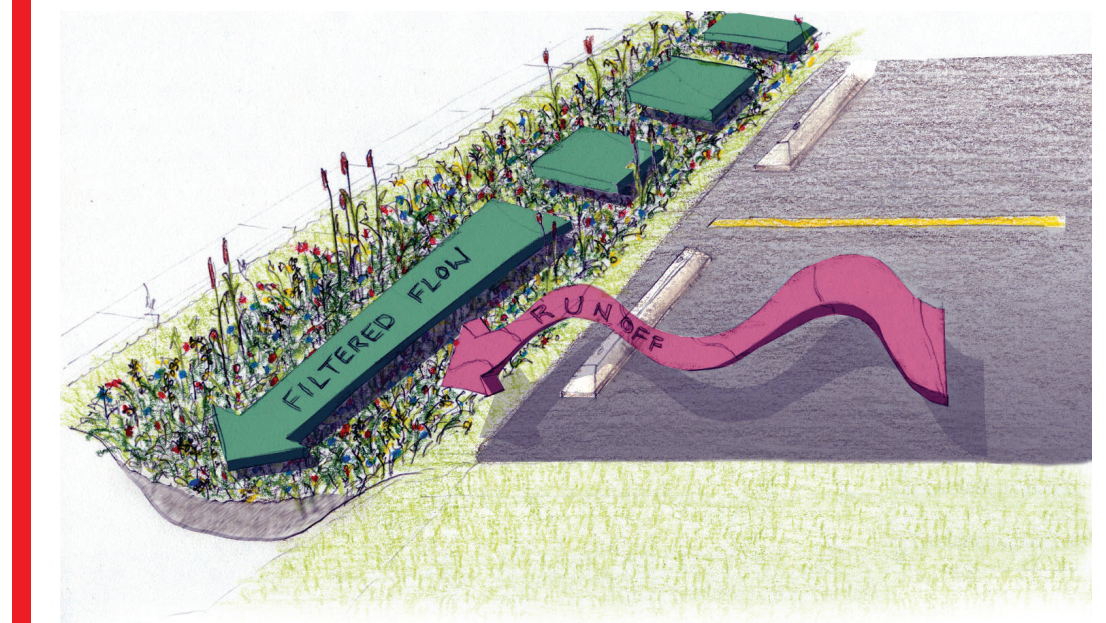


ROOF RE-DESIGN

Background
After visiting Queen of Peace it was understood that the heating and cooling loads of the roof are dramatically insufficient for today's standards. Beyond this idea, other possibilities are being brought to attention, including the possibilities of wind power, solar power and water collection systems.

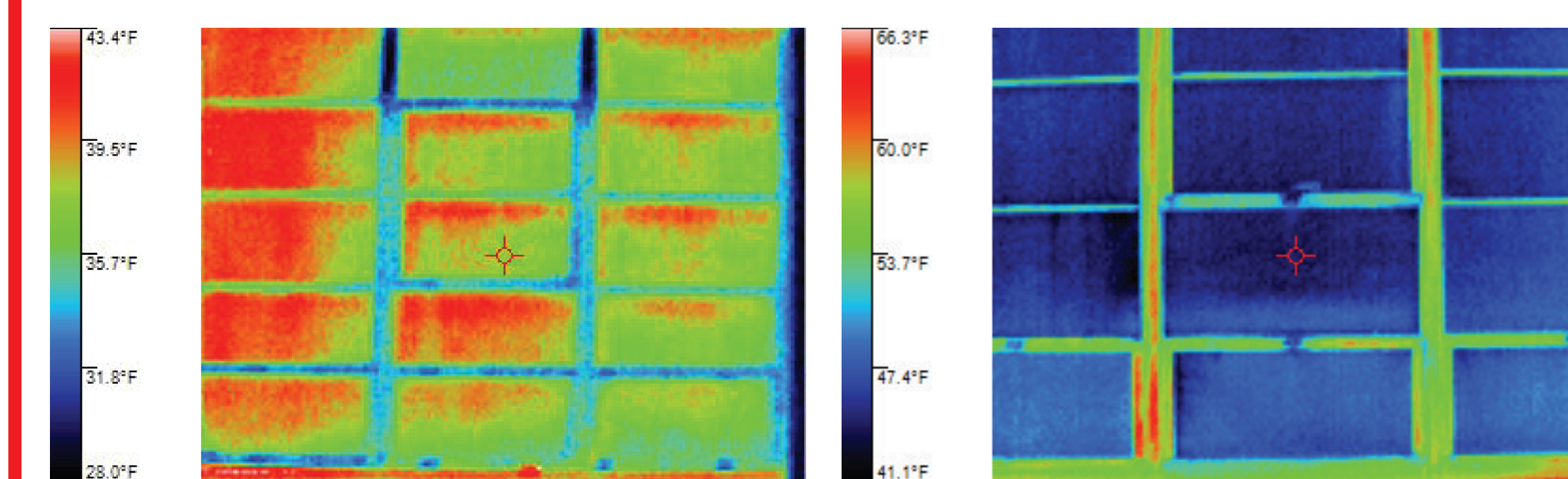


- Objectives**
- Reduce the carbon footprint of Queen of Peace
 - Reduce energy consumption bill for Queen of Peace
 - Increase comfort levels within the building
 - Educate the student body about sustainability through the schools active use



WINDOW REPLACEMENT

Background
After meeting with Queen of Peace High School and conversing with its community, it was determined that current window equipment (original to facility) is out of date and taxing the heating equipment. A full assessment of current conditions in throughout the school was performed and subsequently a cost versus benefit analysis was executed to determine the utilities saving potential for the school.



- Objectives**
- Reduce energy consumption bill for Queen of Peace
 - Increase comfort levels within the building
 - Beautify Facilities

