Integrative Design Process Energy Summary

School: LLW:

Date of IDP Workshop:

Sustainability Consultant:

# Discovery

## Energy Use

**Target source energy use:** The school performance energy target is 70 Source EUI.

## Site Conditions

### Site Shading

Review the IDP Shading Study. **Rank the favorability of each scheme**.

Shading Table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Scheme 1 | Very Unfavorable | Somewhat Unfavorable | Neutral | Somewhat Favorable | Very Favorable | Not Feasible |
| Scheme 2 | Very Unfavorable | Somewhat Unfavorable | Neutral | Somewhat Favorable | Very Favorable | Not Feasible |
| Scheme 3 | Very Unfavorable | Somewhat Unfavorable | Neutral | Somewhat Favorable | Very Favorable | Not Feasible |

### Exterior Lighting

Describe any features that may have special lighting requirements. Describe opportunities to have single fixtures meet multiple lighting needs.

### Landscaping

Describe opportunities for deciduous shade plants/trees on the south side of the building, and evergreen trees on the north/west sides.

### Adjacent Site Conditions

Describe any existing built environment conditions and vegetation that can provide shelter from extreme weather or to deflect unwanted noise, if any.

# Massing, Envelope and Façade Elements

Review the Shading Study and Box Model Information Summary. When determining the most favorable scheme, reduction in boiler capacity is preferable to reduction in chiller capacity. The box model only includes daylighting controls in a specific run, and higher chiller capacity indicates greater daylighting potential.

1. **List the preferred Scheme based on box model. More than one may be considered if results are similar. Options that are not feasible due to site constraints may be eliminated. Briefly describe the decision making process:**
2. **Scheme for Design:**
3. **If the Scheme selected for the design is not among the preferred options from the box model**

**a) Explain why the preferred box model scheme is not suitable**

**b) Describe how the findings from the box model will influence the design**

1. **Describe the strategies for limiting the vision glazing while maximizing daylighting. Provide proposed window wall ratio.**
2. **Describe the consideration of thermal breaks in the envelope assembly and the integration of details in the design process.**

# Renewable Energy Analysis

Identify areas where photovoltaic (PV) solar panels may be installed and provide strategies to maximize available PV area.

# MEP Layout Optimization

1. **Do special circumstances advocate for consideration of HVAC alternates to the standard design?**
2. **If yes, describe the HVAC system(s) under consideration**
3. **Describe how the following will be addressed in the design. Both architectural and HVAC disciplines should be considered:**
4. **Reducing cooling loads**
5. **Reducing heating loads**
6. **Limiting air duct pressure drop**
7. **Limiting envelope penetrations**
8. **Limiting piping pressure drop**
9. **Other**

# Daylight

Describe daylight access and design strategies for the gymnasium.