SUSTAINABLE DESIGN APPROACH
WORLD TRADE CENTER WEST (WTCW) ROOF REPLACEMENT

PURPOSE

This serves as a summary document for the sustainable design coordination for the World Trade Center West (WTCW) Roof Replacement project. Additional information can be found in Project Management's Notebook.

SUSTAINABLE DESIGN APPROACH

The WTCW Roof Replacement project has been identified as a Tier 2 project under the Sustainable Evaluation Framework Policy Directive (SEF Policy Directive) adopted by the Port of Seattle Commission in January 2020. Tier 2 projects are described as:

> *Tier 2: Medium-sized, or more complex, projects that have opportunities for sustainability benefit would be subject to targeted sustainability analyses and strategies. Tier 2 projects may receive a cost per ton of carbon calculation.*

The scope of the project is to replace the existing ballasted roof on top of the 20,600 square foot WTCW building.

Figure 1. WTCW Roof Replacement Project

Following the project kickoff meeting, the Project Manager and Sustainability Coordinator assembled a *Sustainable Project Assessment and Review Collaboration* (SPARC) team The SPARC team leverages port expertise and knowledge of existing and emerging sustainability practices to:

(1) Identify, review, brainstorm, and recommend sustainability concepts and ideas for project and operational teams to consider and evaluate during the development and design stage of port projects.

(2) Encourage project and operational teams to evaluate and consider innovative strategies to reduce emissions and energy use beyond traditional approaches.

(3) Select and apply the relevant Sustainable Evaluation Framework criteria to highlight tradeoffs and benefits during development of the Sustainable Design Approach (SDA).

PROJECT GOALS

The SPARC team met in August 2021 to solidify project goals which were shared with the designer to identify potential design alternatives/strategies moving into the 30% design process.

- **Energy Efficiency and Environmental Health**
  - Reduce heat island effect within the urban core
  - Explore opportunities to reduce the building's and construction project's carbon footprint (ie, buy local, material reuse, recycled content, energy efficiency)
  - Explore solar and Green Roof Technology
  - Utilize construction best management practices
- **Sustainable Asset Management**
  - Maximize total cost of ownership
  - Consider ease and frequency of maintenance
- **Materials**
  - Reuse materials if possible
  - Consider environmentally-friendly alternative materials
  - Reduce waste
- **Financial Sustainability**
  - Balance project cost and function against environmental benefits
- **Impacts to Tenant**
  - Ensure a safe project
  - Improve tenant comfort
  - Minimize tenant and visitor disruptions

SUSTAINABLE EVALUATION FRAMEWORK CRITERIA

The goals identified by the SPARC team support four of the seven criteria articulated in the SEF Policy Directive:

- **Reduce GHG Emissions/Protect Health and the Environment.** This project focuses on the replacement and upgrade of existing infrastructure while limiting environmental impacts. Goals focus on materials, reduction of carbon footprint, and construction best management practices. The project will explore the incorporation of solar and green technologies.

- **Increase Resilience.** The proposed improvements will upgrade the existing roof, limiting future damage to the existing structure and upgrading the roof to meet current code requirements.
- **Advance Innovation.** This project will explore the option of installing a green roof, which has not been utilized by the Port before.

THIRD PARTY CERTIFICATION

The SDA is required to include a recommendation as to whether a project should pursue an applicable third-party sustainability certification (such as LEED or Envision.) Staff does not recommend pursuing certification for this project since it only includes roof replacement. However, it is pursuing green design options.

NEXT STEPS

SPARC recommendations within this SDA will be presented to commission along with the request for authorization for design funds. The Project Manager and Sustainability Coordinator will continue to work with the SPARC team to develop a Draft Sustainable Design Strategy (SDS) that defines alternatives to meet the goals that are included herein. The Draft SDS will be presented to the Sustainability, Energy, Air, and Climate (SEAC) Committee to present sustainable design elements that are incorporated in 30 percent design.

The SEF Policy Directive requires that the project team evaluate and quantify the sustainability costs and benefits of the SDA. This will be completed iteratively as the design progresses, making sure to coordinate with the project sponsor as appropriate. The SDS and analyses will be finalized as design progresses. Any significant changes to design will be brought to the attention of the SEAC Committee. The Final SDS will be included in the Commission authorization request for construction funding for the project.