

When the award-winning collaborative team from Stantec and Hensel Phelps Construction came together for a second time, their task was to ensure the new Sound Transit Operations and Maintenance Facility East project—part of the East Link expansion program in the greater Seattle area—was well lit for task-heavy work while being easy on the eyes of the employees.

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support the station. The operations building, dominated by the 40-ft high vehicle-maintenance area, includes seven entry points for 14 maintenance bays, while the Maintenance of Way building features extra workspaces and various fabrication shops to serve station workers out in the field at the railyard or other light-rail stations.

Lighting an interior with equipment large enough to work on train-car maintenance without casting shadows that would inhibit the station workers' work, while also providing a cohesive design, proved the biggest hurdle. "Coordination with other

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LED project also needed to comply with both Buy America—a federal initiative to use American-made materials—as well as Sound Transit design requirements, which specified detailed light-level requirements per space.

In both buildings, wash bays that required an average of 50 footcandles are lit with wet-location/vapor-tight fixtures mounted parallel to the rail vehicles. In the operations building's maintenance area, high bays (Cree KBL Series) provide an average of 50 fc of general ambient light at 3500K.

For localized ambient lighting cast on the faces of parked light rail vehicles, the design team used

lensed strip lights (Winona) mounted to the floor of the work pit where staff stand provide an average of 100 fc to specific areas beneath the vehicles.

"The pits also posed challenges," says Fiedler, "mainly related to high-illuminance criteria and limited mounting options for providing ample light without creating a glare problem. It's a tight space, so the solution had to be simple and very effective." Straightforward lighting controls that allowed for 0-10-V dimming capabilities in certain non-task specific sites followed code requirements, but additional controls located in the pits give anyone working in those areas full control over task lighting.

Though function informed aesthetics throughout the majority of the project, Fiedler noted the importance of creating a welcoming work environment. "This is a highly technical lighting project, however, we all want to work in a space that looks and feels good—occupant health and satisfaction are critical as well. Finding ways to organize the functional lighting and establish hierarchy, or design moments where we could, was rewarding." In

with its own set of challenges. The 96-bay train-car storage yard, for example, required an average of 2 fc. “Knowing that the vehicles would block the light from any perimeter fixtures, we felt we needed to look to a solution that wasn’t limited to outrageously high pole-mounted luminaires.” Instead, the design team collaborated with the track-power