

THE CODE INNOVATIONS DATABASE

Northwest EcoBuilding Guild

The Bullitt Center Solar "Skybridge"



Category	Energy
Subcategory	Net Zero Water, Net Zero Energy
Specific Innovation	Large Scale Photovoltaic Roof Garden
Jurisdiction	City of Seattle
Parcel Number	8155700000
Approving Official	Nouri Samiee, Dave Cantrell, Chief Plumbing Inspector
Office or Department	City Ordinance
Owner	The Bullitt Foundation
Building Type	Commercial
Square Feet	51,000
Architect	Miller Hull Partnership, Seattle
Builder	Schuchart
Subcontractor	PSF Mechanical, PAE Consulting Engineers, 2020 Engineering
Applicable Codes and Standards	SMC 23.24.060
	Title 23 - Land use code
	Subtitle III land use regulations
	Chapter 23.40 compliance with regulations required—exceptions

Abstract In the Northwest climate, solar photovoltaic panel gardens must overcome the obstacle of less direct sunlight and length. The Bullitt Building in Seattle, in order to meet all the specifications of the Living Building Challenge, needed to hang Photovoltaic panels over the footprint of the building, resulting in land use complications.

Permitting Process The designers of the Bullitt Building were faced with the problem of the photovoltaic array infringing (overhanging) over the sidewalk (public realm). The photovoltaic array would extend over the sidewalk of East Madison Street, 15th Avenue East, and to the centerline of the alley between East Madison Street and East Pine Street. The PV array will be 76 feet above the sidewalk, and some light will be able to get through the panels and allow for growth and normality below. The designers of the Bullitt PV array approached the Seattle Design Commission with the barrier and developed a presentation explaining their situation. The Seattle Design Commission granted the designers of the Bullitt Building an exception to the land use ordinance Title 23 LAND USE CODE, Subtitle III Land use regulations, by changing the coding of the photovoltaic array to a sky bridge project. The Bullitt Center is unique as a code innovation case study because of its participation in the City of Seattle's Living Building Pilot Program. This new citywide ordinance, Seattle Municipal Code 23.40.060, says, "The purpose [...] is to establish a Living Building Pilot Program. The goal of the Pilot Program is to encourage the development of buildings that meet the Living Building Challenge by allowing departures from code requirements that might otherwise discourage or prevent buildings from meeting this standard." This ordinance means that special conditional-use permits or variances were either more easily obtained or allowed by the city. An interesting note about this ordinance is its intention to help Seattle code officials understand where current code creates barriers for green design. Code innovations uncovered during the pilot program will help shape future Seattle building codes.

Project Description Due to Seattle's climate, the Bullitt Building's photovoltaic garden will have to extend over the edge of the building into the public realm. The photovoltaic panels that are planned to be constructed on the roof of the Bullitt Center in Seattle will help complete the goal of achieving the "Living Building Challenge" for the Bullitt building. Code section SMC 23.40.060 of the "Living Building challenge" requires that all energy be used on site, or the building uses 25% or less energy than a building of similar size and use. The photovoltaic array garden would dramatically increase the goal of net zero energy consumption for the center. But in this specific location and energy use, the Photovoltaic array will have to extend over the public sidewalk below, creating a coding problem for the designers. The panels were too elevated on the structure to serve as an awning, so the permitting for the array garden will be that of a sky bridge, which will cost the Bullitt Center sixty five thousand dollars a year in taxes to the city. This variance was given to the Bullitt Center designers due to the innovation and green technological achievement of the Bullitt project, and the regulations and city cooperation created by the Living Building Challenge and growing support for green innovations and examples of sustainability in the built environment. Due to the innovation and green building achievement and goal of aligning with code SMC 23.40.060 of the Living Building Challenge, the designers were allowed exceptions to city and state code barriers that arose in design and construction processes. This code innovation is an example of city code and land use ordinances being changed or exempted for green building projects, which has allowed designers of the Bullitt building to continue forth with this groundbreaking project and goal. The photovoltaic array garden will contribute to the onsite electrical production of the Bullitt building (coded as a sky bridge by land use Title 23 LAND USE CODE, Subtitle III Land use regulations), and the green technology and design innovation of the structure and Bullitt foundation will serve as important examples in the future of green and living building.