



806 Iwilei Road

Affordable Housing and Resource Center



Project: 806 Iwilei Affordable Housing and Resource Center
Location: 806 Iwilei Road, Honolulu, O'ahu, HI
Client: City & County of Honolulu - Department of Land Management
Firm: G70, Honolulu, HI

The Challenge: The 806 Iwilei Affordable Housing and Homeless Resource Center project site was previously 100% impermeable, consisting only of buildings and pavement. In addition, the native soil permeability, making retention of onsite runoff infeasible.

The Solution: The City's first at-grade biofilter and above-grade biofilter planters were designed to treat 86% of the runoff from the site. An additional ten percent of the site is treated through a downspout filter and the remainder is considered de-minimus.

Instead of using a volume-based design to size the green stormwater infrastructure (GSI), the design team used a flow-through based design. The creation of a newly engineered soil media, designed and tested to allow for pollutant removal, high soil permeability, and support of nutrient levels to sustain plant life, allowed the team to significantly reduce the footprint to one-third of the area requirement.

All biofilters also included a two-tiered rock drainage layer with perforated pipes to allow for stormwater runoff to be treated and discharged to the City's streets and municipal separate storm sewer system (MS4). The at-grade biofilters are designed to be above requirements for Rules Related to Water Quality.

The Takeaway: This project demonstrates that GSI can be implemented in site-challenged developments and the landscape plants can be selected with low maintenance in mind. The selection of native ground cover, shrubs, and trees allows for the biofilters to treat runoff and sustain plant life with minimal watering and maintenance.



CCH Iwilei Aerial Rendering of the proposed 806 Iwilei Affordable Housing and Resource Center



Completed construction



Construction of the Above-Grade Biofilters
Planter walls are completed, and the waterproofing is installed. Drain rock and engineered soil media to be installed next.



Completed Above-Grade Biofilters



Construction on At-Grade Biofilter
Curb walls and perforated drain pipes installed. Drain rock and engineered soil media to be installed next.



Completed At-Grade Biofilter