Oldcastle Infrastructure
A CRH COMPANY

3000 POWELL | PORTLAND, OR

MaxWell Installation

| Owner
Home Forward

| Contractor
GC: Colas
Earthwork Contractor: M&M Construction Services, Inc.

| Engineer
KPFF Consulting Engineers

| Solution:

1 - Primary Pretreatment Settling Chamber

3 - 50' deep MaxWell IV Drywells

The 3000 Powell affordable housing project is located in the Creston-Kenilworth neighborhood of Portland, OR and will provide a mix of studio and larger units, totaling 206.

Geotechnical testing concluded the site contains 50' of undocumented fill and approximately 25' of that fill is contaminated, which would make traditional 30' drywells infeasible, but not MaxWell drywells. By using metal casings and slurry to seal off the contaminated fill, our drill rigs are able to drill into the native, sandy subsoil, which is ideal for infiltration. As a result, the native soil is protected from the contamination above and can be used to infiltrate on-site stormwater meeting City of Portland's stormwater management requirements.

CHALLENGE

Twenty-five feet of contaminated fill made protecting the native soil from contamination and the ability to infiltrate on-site stormwater a top priority.

In order to address stormwater runoff and it's impact on the surrounding area, the City of Portland requires stormwater runoff from the 1.4 acres of impervious surface be managed on-site.

Additional site footprint constraints limited the use of larger, shallow infiltration solutions.

SOLUTION

The team drilled 5' past the contaminated soil line into native soil to install a metal casing and a bentonite slurry plug blocking further soil contamination and allowing for safe ground water recharge.

The MaxWell meets the City of Portland's drywell requirements for on-site stormwater management.

A MaxWell drywell can be precision drilled and installed inside of an 8' circular footprint compared to a large excavation trench required to install a standard drywell.

BENEFITS

The unique design of MaxWell and the ability to reach and infiltrate deeper into native soil not only reduced the footprint required to meet the needs of the project but also reduced installation time and costs.

The team delivered a solution that managed stormwater on-site and promoted safe groundwater recharge by working closely with the general contractor and consulting engineer to address site-specific needs to meet the City of Portland's regulatory requirements.

> "A traditional 30' drywell was not going to work on this site. We needed a solution that would infiltrate below the 50' undocumented fill line and control the contaminated soil to recharge the groundwater below. And MaxWell addressed those challenges."

Josh Lighthipe
Sr. Project Manager | KPFF Consulting Engineers