



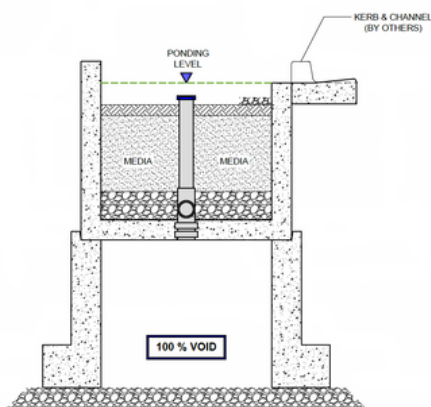
The Owairaka Subdivision, a transformative redevelopment project in the Roskill community, is delivering 10,000 new terraced and apartment homes over the next 10-15 years. Developed by the Piritahi Alliance on behalf of Kāinga Ora - Homes and Communities, this project represented a significant contribution to Auckland's housing needs. A key component of this undertaking was the implementation of a compact and effective green infrastructure solution for stormwater management, compliant with Auckland Council regulations.

**“Innovation meets collaboration! This project seamlessly integrated Filterra’s compact biofiltration technology with stormwater detention, setting a new standard for smart, sustainable stormwater management.”**

## THE SOLUTION:

Piritahi partnered with Stormwater360 to implement a cutting-edge, two-part stormwater treatment system:

- **Retention Chamber:** A concrete infiltration chamber was installed to provide stormwater retention.
- **Filterra® Biofiltration System:** A Filterra Biofiltration System was positioned atop the retention chamber for effective treatment.



## CHALLENGES: Navigating a Complex Site

The Owairaka site presented several unique challenges:

- **Protecting Existing Trees:** A well-established tree root network required careful consideration and protection.
- **Managing Existing Utilities:** Aged and potentially fragile underground and overhead services posed obstacles to excavation.
- **Difficult Ground Conditions:** The presence of shallow basalt rock made deep excavation both challenging and expensive.
- **Meeting Regulatory Requirements:** the site is located in a SMAF area which requires detention and retention, however due to the close proximity to the estuary, Council has waived the detention component, but mandated 5mm retention for stormwater management.

A conventional rain garden, while a viable option, would have necessitated tree removal and costly relocation of underground services. A smaller-footprint rain garden with integrated retention capabilities was essential to meet the site's unique constraints.



## HOW IT WORKS: A Natural Filtration Process

Stormwater from the Owairaka Subdivision flows into the Filterra rain garden compartment for treatment. The treated stormwater then flows down into the infiltration chamber, where it is gradually absorbed into the natural rock, replenishing the groundwater. When the infiltration chamber reached its capacity, any excess treated water is safely discharged into the stormwater network, ultimately flowing into Oakley Creek.



## KEY BENEFITS: A Win-Win for the Community and Environment

The chosen solution delivered several significant advantages:

- **Compact and Efficient:** The high infiltration rate of the Filterra media allowed for a significantly smaller footprint per device, optimizing land use.
- **Minimized Site Disruption:** The system protected existing trees and underground services, avoiding costly relocations and preserving the urban landscape. The shallow excavation requirement also minimized disruption from the basalt rock.
- **Rapid Installation:** The two-piece system arrived on-site ready for installation and was assembled in less than half an hour, reducing construction time.
- **Protection During Construction:** The sealed design of the Filterra prevented construction runoff from damaging the system before commissioning, ensuring its long-term integrity.
- **Long-Term Performance Guaranteed:** Stormwater360 oversaw commissioning, planting, and the first year of maintenance to ensure proper plant establishment and compliance with quality standards, guaranteeing long-term system performance.

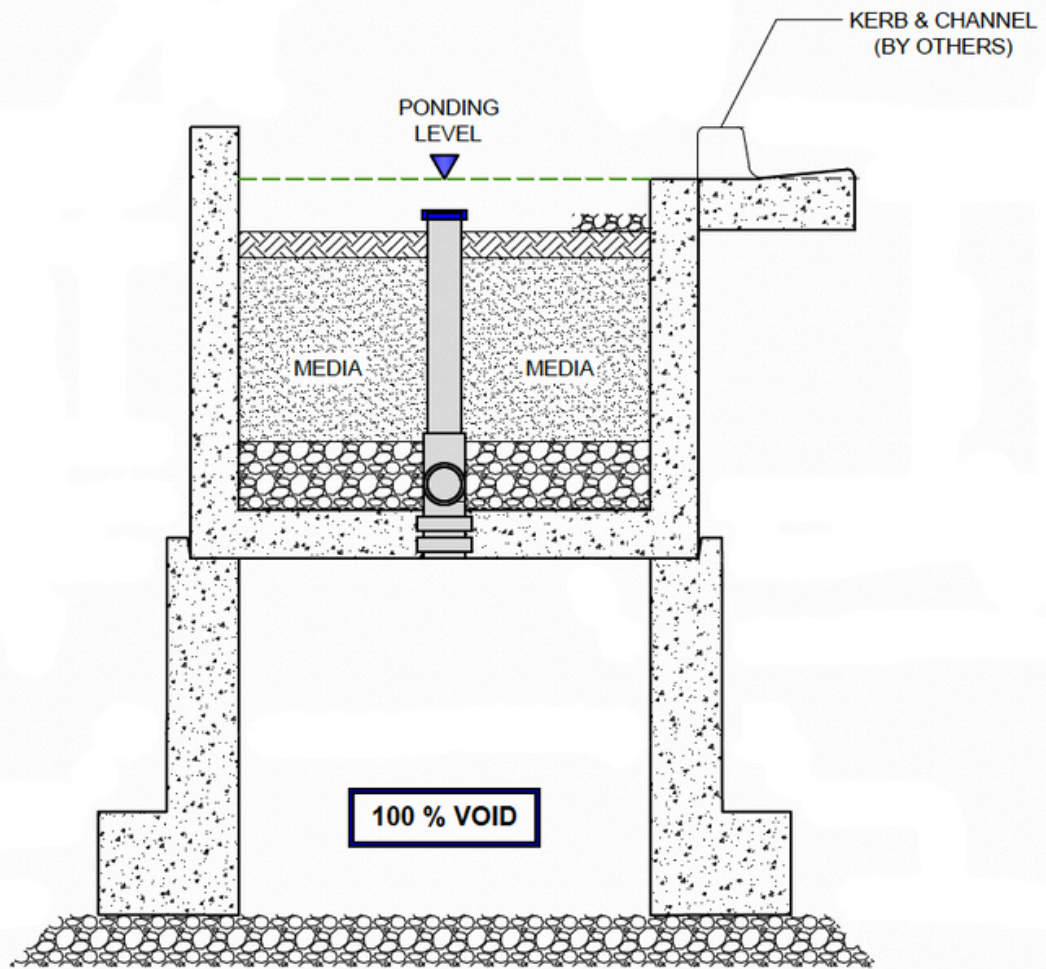
## CONCLUSION: A Model for Sustainable Development

The Filterra Biofiltration System, combined with a retention chamber, provides an innovative and highly effective stormwater management solution for the Owairaka Subdivision. By integrating a high-performance, space-efficient green infrastructure system, Stormwater360 and Piritahi successfully meet stringent regulatory requirements while minimizing environmental impact and preserving the existing urban environment. This project stands as a testament to the power of sustainable development practices in creating thriving communities.



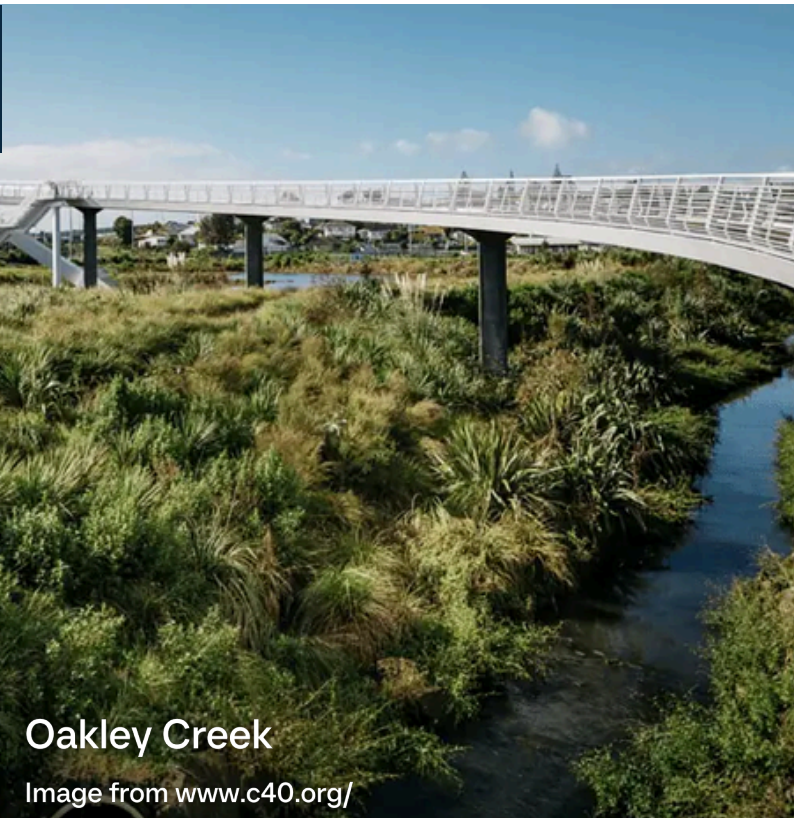


## Cross section of the Filterra and the retention chamber



Filterra® with retention chamber being installed

(Filterra® top covered for protection before commissioning)



Oakley Creek

Image from [www.c40.org/](http://www.c40.org/)