



celebrating  
50 years

Rainwater Harvesting &  
Stormwater Management

# 2020 | Case Studies

Professional Water Resource Management Solutions

A photograph of a construction site for stormwater management. In the foreground, a large, grey, multi-layered plastic structure is being installed. It consists of several stacked layers of perforated plastic panels. A circular manhole cover is visible on top of the structure. The background shows a residential area with houses and trees, and several workers in safety vests are visible on a higher level of the construction site.

# STORMWATER MANAGEMENT

Stormwater Management Systems Case Studies

**BARR**<sup>TM</sup>

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# CASE STUDIES

## Baycrest On The Rise, Coquitlam, BC: Stormwater Management



The project began with EcoBloc Maxx base plates laid at the base of the site bed and secured with connector pieces. Blocks were then stacked and connected up to five layers and finished further endplates and pipe connections. Pipe adapters were used to secure the pipe connections in place. The structure was then wrapped with 8 oz. geotextile and an inspection port was secured. Finally, the site was backfilled evenly with gravel.



### Project Team

Supplier: BARR Plastics  
Contractor: Gemco Construction Ltd  
Engineer: WSP

### Specifications

Volume: 60.01 m<sup>3</sup>  
Loading: No Vehicle  
Application: Infiltration

### BARR Product

EcoBloc Maxx



# CASE STUDIES

## Coyote Creek Elementary, Surrey BC: Stormwater Management System



### Project Team

Supplier: BARR Plastics  
Contractor: Ace Excavating Ltd  
Engineer: Aplin & Martin

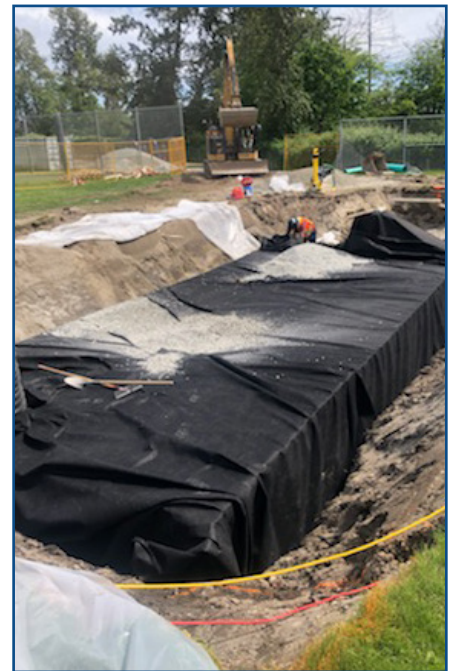
### Specifications

Volume (m<sup>3</sup>): 70.24  
Loading: 15T  
Application: Infiltration

### BARR Product

Graf EcoBloc Light  
Graf EcoBloc Insept Flex  
Graf Vario 800 Flex Shaft

The base layer consists of both Ecobloc light & flex, with two Vario shafts also installed for inspection and cleanout access. Each block is stacked along the base layer, secured with connector elements and end plates. An extension was added to the Vario shaft and the final layer was added. The site was then evenly backfilled with gravel as per manufacturer guidelines.



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# CASE STUDIES

Penmat Developments, South Surrey: Stormwater Management



## Project Team

Supplier: BARR Plastics  
Developer: Penmat Mana  
Engineer: Coastland  
Civil Contractor: Southwest Contracting

## Specifications

Volume: 90 m<sup>3</sup>  
Application: Detention

## BARR Product

EcoBloc Inspect Flex



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# CASE STUDIES

**Skyview Terrace, Kelowna:** Stormwater Detention & Infiltration



## The Challenge

Create a stormwater surge reservoir in a non-standard excavation site (triangular) for hardscape runoff in a multi-family townhome project.

## The Solution

Utilizing an Ecobloc Flex stormwater infiltration system enabling direct infiltration into the ground with overflow into the storm sewer system. The surface above the system was turned into a park greenspace.



## Project Team

Supplier: BARR Plastics

Contractor: Kelowna Highland Developments

Engineer: D.E. Pilling & Associates

## Specifications

Volume: 90m<sup>3</sup>

Loading: Pedestrian

Application: Detention/Infiltration

## BARR Product

Ecobloc Inspect flex



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# CASE STUDIES

## Lynn Valley, North Vancouver: Custom Stormwater Management System



When tasked with finding an efficient and compliant stormwater management system in North Vancouver's Lynn Valley, the developer enlisted the expert help of a local civil consulting firm. They approached BARR Plastics Inc for a durable solution that would not only protect the development against flooding but would also work with the site's unique, tight hilly profile. It was also key for the system to meet the District of North Vancouver Hastings Creek Watershed Stormwater report stringent storage volume requirement of 1,143 cu.m / Ha.



The expert team at GRAF & BARR Plastics Inc specified, designed and supervised the installation of three stormwater infiltration systems, which were fitted in two phases. During the first phase, a 1,180 m<sup>3</sup> two-tank system was installed. It was built using 5,760 heavy-duty EcoBloc Inspect Flex modules to meet a burial depth of 5 meters with in-built inspection channels for easy maintenance. During phase two, a second, 658 m<sup>3</sup> system was fitted consisting of 3,210 EcoBloc Inspect Flex modules.

This system was built with enough capacity to resist the kind of extreme storm only likely to happen once in a 100-year period, with an additional 15% contingency buffer for climate change on top of this. This ensures complete peace of mind for everyone – including the developer and future residents.

### Project Team

Supplier: BARR Plastics

### Standard

SWM City Policy

### BARR Product

EcoBloc Inspect flex



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# CASE STUDIES

Georges St., North Vancouver: Stormwater Management



## Project Team

Supplier: BARR Plastics  
Developer: ITS Developments  
Engineer: WSP  
Civil Contractor: Ponte Bros

## Specifications

Volume: 142 m<sup>3</sup>  
Application: Detention

## BARR Product

EcoBloc Light



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# CASE STUDIES

## Coyote Creek Townhomes, Surrey BC: Stormwater Management System



### Design Requirement

To install a below-ground infiltration system rated for fire truck loading (HS-25) under a Laneway of Coyote Creek townhouse development in Surrey, BC. These tanks were designed to promote ground water recharge and minimize the hydraulic loads in the sewer system during storms to prevent flooding.

### The Solution

BARR Plastics Inc supplied a Graf Ecobloc stormwater management system. Ecobloc is a single piece interlocking modular system with 95-97% void ratio to minimize excavation volume and installation time. High vertical & lateral strength of the modules allow for installation depths of up to 5 meters or 14 layers with heavy duty lorry-bearing loading capacity of HS-25. Local availability of the product and no assembly of the block required for modules, Ecobloc proved to be a convenient and cost-efficient option for the developer and contractor.



### Project Team

Supplier: BARR Plastics  
Developer: Anthem Properties  
Engineer: WSP  
Contractor: Mainland Civil Site Services Inc.

### Specifications

System Size:  
33.6m L x 4.0m W x 0.68m H (Tank #1),  
27.2m L x 4.0m W x 0.68m H (Tank #2)  
Tank Volume: 86.78 m<sup>3</sup> (Tank #1),  
70.25 m<sup>3</sup> (Tank #2)  
Loading: HS-25/60t  
Application: Infiltration

### BARR Product

Ecobloc Inspect flex



# CASE STUDIES

**Kanaka Industrial Park, Maple Ridge:** Stormwater Infiltration & Attenuation



## The Challenge

City grey infrastructure at capacity; the site required onsite infiltration. Located in a new industrial park that had no storm sewer.

## The Solution

BARR provided an EcoBloc 17,000 gallon direct infiltration system, as specified by Vector Engineering. The system was installed under the car park to the south side of the building.



## Project Team

Supplier: BARR Plastics

Engineer: Vector Engineering

## Specifications

Application: Attenuation-Infiltration

Loading: 60t/HS-25

Roof size: 20,000 ft<sup>2</sup>

System Size: 76' x 23' 7"  
(23.3m x 7.7m)

Volume: 17,430 USG  
(62.68 m<sup>3</sup>/65,979 L)

## BARR Product

Ecobloc Inspect flex



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# CASE STUDIES

Fraser Landmark, Surrey BC: Stormwater Detention System



This site came with several challenges; the first was that the tank location needed to be installed in a tight space with height restrictions. Secondly, the tank location was built in an existing, irregular-shaped planter courtyard. This made the tank more difficult to fit into this unusual space, but we were able to find a tank configuration that fit well and maximized the available space.



## Project Team

Supplier: BARR Plastics  
Developer: Darshan Builders  
Engineer: Citiwest

## Specifications

Volume (m<sup>3</sup>): 115  
Application: Detention

## BARR Product

Graf EcoBloc Inspect Flex  
Graf EcoBloc Maxx



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# CASE STUDIES

**Maddaugh Elementary, Surrey BC:** Stormwater Detention System



## The Challenge

The burial depths & earth cover for this particular installation were outside Ecobloc standard installation parameters.

## The Solution

This EcoBloc tank had to be wrapped with a single piece, factory welded liner to avoid any leaks.



## Project Team

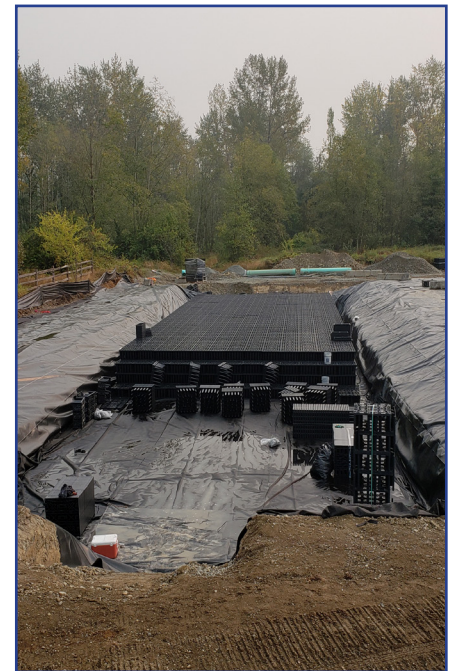
Supplier: BARR Plastics  
Developer: Surrey School District  
Engineer: Coastland

## Specifications

Volume (m<sup>3</sup>): 595  
Application: Detention

## BARR Product

Graf EcoBloc Inspect Flex  
Graf EcoBloc Maxx



# CASE STUDIES

## Volkswagen, Chilliwack BC: Stormwater Detention System



This site required increased onsite storage required by the Municipality, high water table & constant heavy traffic loading on the tank. We used the Graf EcoBloc Maxx block to create this 240 m<sup>3</sup> detention tank, complete with accessories like the manway extension in the photo below.



### Project Team

Supplier: BARR Plastics  
Developer: N/A  
Engineer: Aplin Martin

### Specifications

Volume (m<sup>3</sup>): 240  
Application: Detention

### BARR Product

Graf EcoBloc Maxx

