

Atlantis®
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Dorsal Avenue Extension

Project Location
Santiago, Chile

Atlantis Application

Underground Infiltration Tanks

Project Overview

The Dorsal Avenue Extension in Santiago required a stormwater management solution to address increased surface runoff during rainfall events and the associated risk of flooding in low-lying areas of the road. The project involved a 187,200 m² catchment area and incorporated an underground network of Atlantis infiltration trenches as part of the stormwater strategy.

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Technical Summary

Project	Dorsal Avenue Extension
Location	Santiago, Chile
Application	Underground Infiltration Tanks
Completion	2011
Size	8 infiltration trenches, 308 linear metres (329 m³)
Surface Use	Urban roadway / public infrastructure
Atlantis System	Flo-Tank® Hexa

Design Challenge

The extension of Dorsal Avenue increased surface runoff during rainfall events, creating a risk of flooding within low-lying areas of the road. The stormwater strategy therefore needed to intercept and manage runoff from a substantial 187,200 m² catchment area while integrating the required infrastructure within the available project site.

The solution required stormwater to be treated before entering the infiltration system and then distributed through a network capable of providing underground storage and infiltration. The infiltration trenches also needed to provide sufficient storage efficiency to enable the system to be implemented within the site of the plaza.

01 Manage stormwater runoff associated with a 187,200 m² catchment area.

02 Address increased surface runoff generated during rainfall events.

03 Reduce the risk of flooding in low-lying areas of the road.

04 Incorporate sediment-trap pretreatment before stormwater entered the infiltration network.

05 Convey runoff through longitudinal collectors to the infiltration trenches.

06 Provide sufficient underground storage to enable implementation within the available site of the plaza.

Solution

The stormwater system incorporated a network of eight Atlantis infiltration trenches extending for a combined 308 linear metres, with a stated volume of 329 m³. The trenches were constructed using Atlantis Hexa Modules configured six high, with module dimensions stated as 2.6 × 0.41 × 0.685 m.

Stormwater first passes through a sediment trap before being captured by longitudinal collectors along Dorsal Avenue. These collectors convey the treated runoff to the Atlantis infiltration trench network.

The infiltration trenches provide storage equivalent to 90% of their total volume, enabling the stormwater system to be accommodated within the site of the plaza while providing the required underground storage and infiltration function.

Benefits

- Eight infiltration trenches distributed across the stormwater system.
- 308 linear metres of infiltration trench providing a stated volume of 329 m³.
- 90% storage volume within the Atlantis infiltration trenches.
- Pretreatment through a sediment trap before runoff enters the infiltration network.
- Runoff conveyed through longitudinal collectors from Dorsal Avenue to the infiltration trenches.
- Underground storage configuration enabling implementation of the system within the site of the plaza.

Considerations

TThe infiltration network comprised eight trenches extending for a combined 308 linear metres, constructed using Atlantis Hexa Modules in a six-high configuration. Each module is stated as measuring 2.6 × 0.41 × 0.685 m.

The project specifies a trench depth condition of “6 m above the top level of the modules.” Because this wording does not clearly establish whether the 6 m dimension represents cover depth, total excavation depth or another vertical measurement, it should be technically confirmed before being incorporated as a definitive construction parameter.

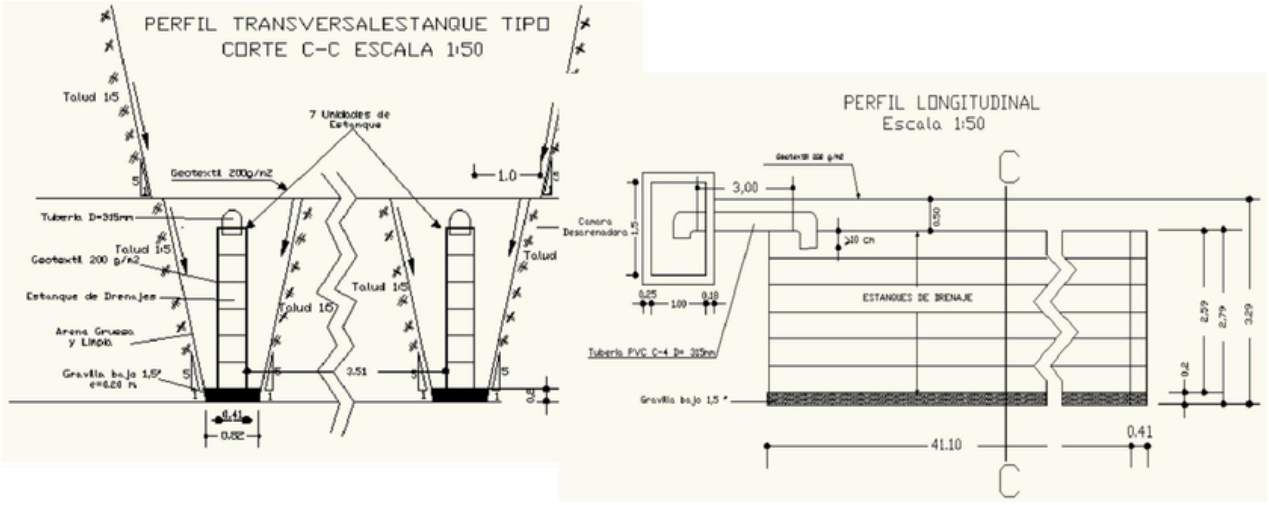
Project Outcomes

- Stormwater management provided for a 187,200 m² catchment area.
- Eight Atlantis infiltration trenches incorporated into the stormwater network.
- 308 linear metres of infiltration trench installed, with a stated volume of 329 m³.
- Six-high Atlantis Hexa Module configuration used for the infiltration system.
- Stormwater pretreatment incorporated through a sediment trap.
- Treated runoff conveyed by longitudinal collectors to the infiltration trench network.

The project integrated pretreatment, longitudinal collection and modular infiltration trenches to manage increased runoff associated with the Dorsal Avenue Extension. The eight-trench configuration provided 308 linear metres of underground infiltration infrastructure, while the stated 90% storage volume enabled the system to be implemented within the available plaza site.

Did You Know?

The Dorsal Avenue stormwater system incorporated eight infiltration trenches extending for a combined 308 linear metres to manage runoff from a 187,200 m² catchment area.


PERFIL TRANSVERSALESTANQUE TIPO
CORTE C-C ESCALA 1:50
Talud 1:5
7 Unidades de Estanque
Geotextil 200g/m2
1.0
Tubería D=315mm
Talud 1:5
Geotextil 200 g/m2
Estanque de Drenajes
Talud 1:5
Talud 1:5
Talud 1:5
Arena Gruesa y Limón
Grevilla bajo 1.5" e=0.20 m
2.51
0.41
0.82
PERFIL LONGITUDINAL
Escala 1:50
3,00
Talud
Canaleta Desarenadora
0.50
>10 cm
0.25
1.00
0.10
ESTANQUES DE DRENAJE
Tubería PVC C-4 D= 315mm
Grevilla bajo 1.5 "
2.59
2.79
3.29
0.2
41.10
0.41
C
C




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Thank You For Your Attention



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