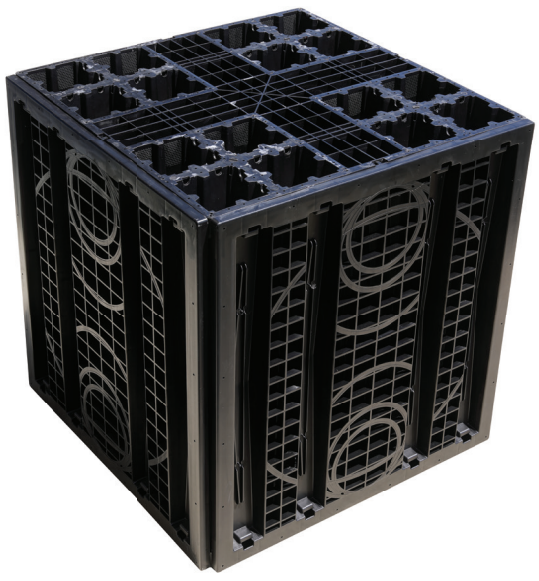
CASE STUDY
ARCHISPACE RESIDENTIAL DEVELOPMENT SOAK PIT



AQUAFORT, DURAFORCE

ADVANCED GEOSYNTHETIC SOLUTIONS

PROJECT INFORMATION

To help create affordable housing in Te Puke, Archispace is developing a residential site that will accommodate 14 new properties. To effectively manage stormwater, a soakage pit was required beneath the parking bays, an area that would be subject to constant vehicle loading. Originally specified with a traditional plate system, the design was upgraded to the AquaFort system.

DESIGN

The AquaFort stormwater system was designed using double-stacked modules and measuring approximately 8m by 6m, delivering a total capacity of 70m^3. It was wrapped on the top and sides with DuraForce geotextile to ensure separation from surrounding soils. Two stormwater pipes feed into the system, delivering stormwater from both rows of properties within the subdivision.

AquaFort presented Archispace with a system designed for long-term maintainability. Unlike traditional plate-based systems, AquaFort incorporates open channels that provide unimpeded access through the structure. This configuration enables inspection and flushing, ensuring the full storage capacity can be maintained over the design life.

INSTALLATION

With no module assembly required, the AquaFort system achieved installation within a greatly reduced time. The lightweight modules were easy to handle, allowing placement to be completed within a single morning. In contrast, the traditional plate system was programmed to take three to four days. Following placement, side plates were clipped on and the DuraForce wrapping was completed, enabling backfilling to begin within hours.

For Archispace, AquaFort delivered a stormwater management solution that was strong, practical, and cost-effective. The ability to install the system in a single morning significantly reduced construction timeframes and labour costs. The robust design and maintenance capabilities provide Archispace the peace of mind that the system will perform as intended, over its design life.

By choosing AquaFort, the development achieved a stormwater system that not only met engineering requirements but also aligned with the broader goal of creating affordable housing that is functional and sustainable. Councils and engineers can take confidence from this project in knowing AquaFort provides a dependable solution that adapts well to both residential and high-load environments.

The Aquafort provided the following benefits to the project:

- 10x faster to install than traditional plate systems
- Increased compression strength
- Open channels provide maintenance access
- Decreased construction timeframes and labour cost

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