

CASE STUDY

StormTech® Chambers Provide Home's Required Storage Volume

Houston, TX

OWNER

Private Residence, Houston, TX

INSTALLATION DATE

June 2023

ENGINEER

Andrew Lonnie Sikes, Inc., Houston, TX

PRODUCTS

23 StormTech MC-7200 Chambers

CONTRACTOR

Dennis T Williams Inc., Houston, TX

CHALLENGE

After Hurricane Harvey devastated the Houston area in August 2017, city and county officials implemented significantly stricter stormwater detention requirements. The regulations applied to commercial properties and residential properties with lots exceeding 15,000 ft² (1,394 m²).

A private residence built in Houston's River Oaks Estates was required to provide 8,738 ft³ (247 m³) of stormwater detention. The detention system was designed to capture runoff from roof drains, rear yard areas and all concrete surfaces, temporarily storing the water before it was gradually released into the city's storm sewer system.

SOLUTION

ADS met the project's detention volume requirements using StormTech MC-7200 chambers. The chambers were installed within landscaped areas and beneath the residence's driveway and front parking area, allowing the system to avoid conflicts with utility lines entering from the rear of the property.



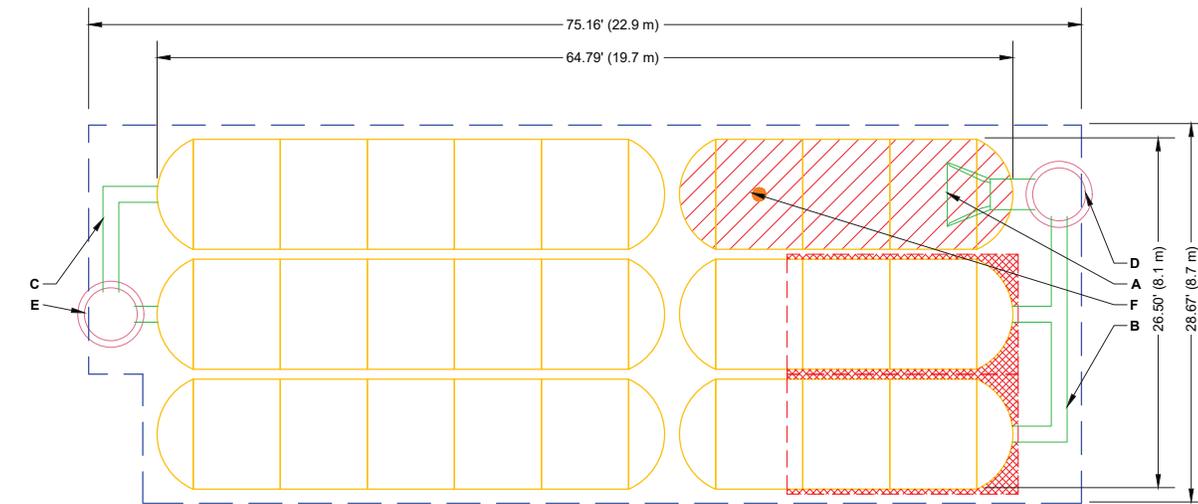
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The homeowner and project engineer selected StormTech chambers for their cost effectiveness and ease of design. The contractor, Dennis T. Williams Inc., was already familiar with the system, having installed StormTech chambers on previous projects. This experience demonstrated the ease of installation and the minimal storage footprint required for the chambers prior to installation.

PRODUCT DESCRIPTION

StormTech chambers save valuable land, reduce flooding risks and protect water resources. The chambers provide a durable structural system and are designed in accordance with AASHTO LRFD Bridge Design specification for HS-20 live loads. StormTech chambers are available in a variety of sizes to meet any project need and are injection molded for uniform wall thickness. StormTech end caps can be either pre-cut or cut in the field to fit the manifolds to save installation time. The end caps also add to the structural integrity of the system and provide storage capacity for larger chambers.



-  ISOLATOR ROW PLUS (SEE DETAIL)
-  PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS
-  BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

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