

CASE STUDY

StormTech[®], Nyloplast[®], N-12[®]

Provide Caroline Heights' Detention Elm Grove, WI

OWNER

Caroline Heights Apartments LLC, Milwaukee, WI

ENGINEER

K. Singh & Associates, Wauwatosa, WI

CONTRACTOR

D F Tomasini Inc., Sussex, WI

INSTALLATION DATE

Summer & Fall 2024

PRODUCTS

368 MC-3500 StormTech[®] chambers
7 30" (750 mm) Nyloplast[®] basins
11 12" (3000 mm) Nyloplast basins
2,480' (756 m) of 8" (200 mm) N-12[®]
800' (244 m) of 10" (250 mm) N-12
1,060' (323 m) 12" (300 mm) N-12
520' (159 m) 15" (375 mm) N-12
1,880' (573 m) 24" (600 mm) N-12
1 6' x 12' (1.8 x 3.6 m) Up Flo Filter vault
1 6' x 8' (1.8 x 2.4 m) Up Flo Filter vault

DESCRIPTION

Two hundred thirty-seven luxury apartments were built on the site of the former School Sisters of Notre Dame site, with Notre Dame Hall and Maria Hall the focal points. The development was named Caroline Heights, in honor of Mother Caroline Friess, who established the School Sisters of Notre Dame site in Wisconsin. Notre Dame Hall, built in 1898, and Maria Hall will house 35 apartments and were the only original buildings left on the site.

Caroline Heights' stormwater was being stored in ponds, but a lack of volume required a need for more storage that could retain the water and slow the release rate to the ponds. ADS representatives used the StormTech Design Tool to quantify the \$300,000 savings StormTech chambers would achieve and flipped the retention system to MC-3500 chambers.



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The chambers are under green space and were buried so the system was higher than the pond inlet. This prevented pond water from flowing back into the StormTech chambers. An impermeable liner was utilized to detain stormwater, so it didn't infiltrate into the ground because of the apartment complex's underground parking.

All stormwater on the site is captured by Nyloplast basins and conveyed to the StormTech chambers using N-12 pipe. The original plans had specified concrete pipe be used, but D F Tomasini Inc. convinced the engineer to flip from RCP to N-12. D F Tomasini preferred to utilize N-12 pipe and Nyloplast due to ease of installation and cost savings.

Wisconsin has high filter rates to keep the state's waterways clean. Two Up Flo Filter vaults were used as treatment on the site to achieve 80% Total Suspended Solids removal. Up Flo Filters remove sediment, grease, oils and solids.

StormTech chambers come in a variety of sizes. The elliptical arch design transfers loads to the surrounding backfill to provide long-term safety factors required by AASHTO. The chambers are injection molded for uniform wall thickness.

N-12 dual wall pipe has a corrugated exterior and smooth interior wall that provide exceptional strength and hydraulics. The inert HDPE material is resistant to the effects of chemicals, abrasions and hot soils. N-12 is available in 4"-60" (100-1500 mm) diameters and in 20' (6 m) lengths. The inline bell design allows for pipe ends to be pushed together for easy installation. The joint requires only a lubricant during installation which leads to faster installation.

Nyloplast drain basins were custom built for the project as they are for each application. Nyloplast products are more durable and corrosion resistant than precast basins and combine a rugged PVC structure with ductile iron grates. The basins can be easily adjusted in the field to meet the final grade. The structures are shipped with rubber gaskets to ensure a watertight connection.



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