

Stormwater Management

Robert Crown Community Center and Library



Unseen beneath five acres of sports fields and landscape surrounding the Robert Crown Community Center, space for 1.4 million gallons of stormwater awaits the next storm. This stormwater storage system reduces flooding that might otherwise plague the neighborhood if stormwater runoff from the Center's impermeable surfaces of roof, driveways, sidewalks and parking lot were discharged directly to the local sewers. The Center has over five acres of impermeable surfaces that drain into this storage system.

Most of the underground storage is contained in approximately 2,600 interconnected chambers and voids in rock fill surrounding the chambers. Stormwater enters the chamber complex at 11 inlet sewer connections leading from rooftop, driveway, sidewalk and parking lot drains. Stormwater is detained until the storm has passed and it is safe to release the stored water into the relief sewer on Lee Street. Stormwater is released at a low, controlled rate through a single outlet that will not cause sewer backups in the neighborhood. The storage provided is based on a 100-year storm and is equivalent to almost 10 inches of stormwater runoff from the impermeable surfaces.



ROBERT CROWN COMMUNITY CENTER PLAN VIEW

The rooftop is the white area on the left. The driveways, sidewalks and parking lot are in gray. The green sports fields are marked for two soccer fields and one football field. The underground stormwater storage areas are shown dashed in red and lie below the north half of the sports fields and the landscaped area just west of the library. Part of the detained stormwater will also be infiltrated into the subsoil.



AUGUST 2019

INSTALLATION OF STORMWATER STORAGE CHAMBERS

The chambers are a high-density, high-strength polyethene plastic in an arch shape. Beneath, surrounding and on top of the chambers are a uniform-sized rock fill. Both the chambers and rock fill provide most of the stormwater storage space. Infiltration into the subsoil occurs beneath the chambers and rock fill while stormwater is detained.



APRIL 2020

COMPLETED STORMWATER STORAGE

The underground stormwater storage is leveled to receive an aggregate material suitable to support the synthetic turf. The finished surface is capable of supporting light-weight utility vehicles and equipment. In addition to subsoil infiltration beneath the fields, infiltration also occurs in an infiltration area located below ground just west of the library wing.