



CASE STUDY

Synthetic Turf Athletic Field - Water Management & Drainage

LOCATION: Grimsby, Ontario

PROJECT TYPE: Sports & Recreation

PRODUCT USED: Multi-Flow™ | HDPE Pipe | Swamp Grid™ | TE-4



CHALLENGE:

The Niagara Catholic District School Board (NCDSB) was challenged to create a new, state-of-the-art sports field for one of its schools. With the growing demand for quality sports facilities that cater to a wide range of activities, the Board recognized the need to transform an unused open space behind the school into a multipurpose sports field.

They wanted a field that would not only serve as a hub for various sports but also provide a space for community events and school gatherings. The new facility would feature a custom synthetic turf multipurpose field, designed to accommodate sports like soccer, football, and field hockey, along with a six-lane synthetic running track.

To enhance the overall experience, plans also included the installation of barrier-free bleachers for spectators, advanced sports field lighting, and secure fencing around the perimeter.

The challenge was to create a modern sports field that met the diverse needs of the school and community, ensuring durability, safety, and high performance while maximizing the use of available space. The NCDSB aimed to build a facility that would stand the test of time, align with environmental and safety standards, and provide a platform for sports excellence and community engagement.



Existing conditions



Existing track area



CASE STUDY

Synthetic Turf Athletic Field - Water Management & Drainage

TITAN SOLUTION

This multi-faceted project required strategic planning, design, and materials to ensure durability, safety, and performance. One critical component was creating a reliable subbase that would support the synthetic turf, track, and other elements. The subbase is fundamental to the field's long-term stability, drainage, and performance, and choosing the right materials was crucial to achieving the desired outcome.

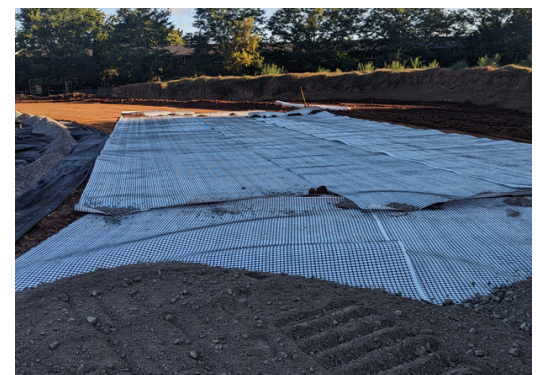
Titan Environmental, a trusted supplier of geosynthetics in North America, partnered with Worldwide Turf Inc. to supply geotextiles, drainage solutions, and other foundational materials that would ensure a stable, durable, and properly drained subbase for the field.

The design approach prioritized using a robust system that allowed the project to benefit from various advanced geosynthetic materials engineered to enhance drainage under the field, facilitate soil reinforcement, and provide a stable foundation for the synthetic turf. Each product was precisely selected and positioned to perform specific roles, enhancing the field's effectiveness and performance.

Our partnership was instrumental in addressing the unique challenges presented by the site, including soil composition, drainage needs, and load-bearing requirements, ensuring the new field would meet performance and safety standards for years to come.



Subgrade preparation



Swamp Grid™ installation



CASE STUDY

Synthetic Turf Athletic Field - Water Management & Drainage

TITAN SOLUTION CONT'D:

The subgrade at the east end of the facility, where the track and field area is located, was soft and unstable, with poor support, which threatened the soundness of the area. Swamp Grid™ was utilized as a comprehensive solution for soil reinforcement and filtration in this location.

Around the perimeter of the field (inside the field, on the side of the concrete curb), HDPE pipes (culverts) were used as collector pipes for drainage. The pipes were installed and sloped from the center of the field to the outside edge, allowing the water to drain off the field and then discharge into the storm system. These pipes are known for their flexibility and lightweight construction, making them easy to transport and handle. They also offer ease of installation and are cost-effective.

To provide comprehensive soil water management, we installed a Multi-flow™ Drainage System. The durable strip drains were installed flat on the ground in a herringbone pattern 5 m (16.4 ft) apart, and semi-perpendicular to the grade. Their extensive surface area collects water quickly, and their unobstructed flow channels carry water away from the field rapidly.

The final application installed in this robust design was the TE-4 non-woven geotextile. It was used to delineate the subgrade from the aggregate base while providing structural support to help distribute loads evenly on the field.



Subgrade at east end of the facility pre-installation



Perimeter trench with HPDE Pipe



Aggregate post Swamp Grid™ installation



CASE STUDY

Synthetic Turf Athletic Field - Water Management & Drainage

ACHIEVEMENT

A key achievement of the project was the use of Multi-Flow™, a fast-acting and durable drainage system, which eliminated the need for extensive trenching and significantly reinforced the field's durability for years to come. Titan supplied 43 custom 150mm (6") x 38m (125') Multi-Flow™ w/ Fabric and 64 custom HDPE Culvert "Perf" 200mm (8") x 6.096m (20').

The installation of the products took approximately four days and played a crucial role in the initial phase of constructing the 11,000 m² (118,403 ft²) multipurpose sports field with custom synthetic turf and a 4,500 m² (4,8534 ft²) six-lane synthetic track. Timely product delivery was essential for the success of this multi-phase construction project, which ensured students at Blessed Trinity had a new sports facility for the upcoming school year. Titan delivered on time, setting the pace for a smooth installation.

The strategic use of Multi-Flow™ and the other Titan products, like Swamp Grid, not only ensured optimal field performance and longevity but also demonstrated a commitment to cost-effective solutions, minimizing disruption and enhancing overall project efficiency. The result was a high-quality sports facility that met the needs of both the school and the community, fostering a space for sports, recreation, and engagement for years to come.



Multi-flow™ installation



Logo installation