

Date: 2023-11-17

Subject: **Information Report – The Use of Artificial Grass in the City of Brampton (RM 57/2023)**

Contact: **Simran Sandhu, Advisor, Special Projects, Planning, Building and Growth Management**

Steve Ganesh, Commissioner, Planning, Building and Growth Management

Report Number: Planning, Bld & Growth Mgt-2023-1029

Recommendations:

1. That the report from Simran Sandhu, Advisor, Special Projects, Planning, Building, and Growth Management to the Council Meeting of December 6, 2023, re: **Information Report – The Use of Artificial Grass in the City of Brampton (RM 57/2023)**, be received.

Overview:

- **This report addresses the Committee of Council’s request (RM 57/2023) for staff to review and report back on the use of artificial grass in residential settings and concludes that issues and complaints surrounding artificial grass are very minimal.**
- **This report informs Council of the current Property Standards, Zoning, and Fill By-laws as they relate to landscaping in residential areas.**
- **This report also includes information from Risk Management and Enforcement regarding their review of landscaping changes and the risk associated, along with the number of complaints received in 2022 and 2023 related to artificial grass/turf.**
- **The use of artificial turf in community centres and the related benefits and challenges are addressed in this report.**

- **This report provides an overview of the implications of artificial grass versus natural grass in relation to impacts on the drainage system.**
- **Potential next steps can include creating a specific Zoning By-law amendment to regulate and enforce practices related to the use of artificial grass and turf.**

Background:

At the September 6th, 2023 Committee of Council meeting, Council passed motion CW304-2023, requesting staff to report on the difficulties experienced in the use of artificial grass in residential settings.

The motion was part of discussion item 11.3.1 at the request of Deputy Mayor Singh, who addressed the Committee regarding an increase in the use of artificial grass in Brampton and concerns regarding the impacts of using this material.

Artificial grass/turf is a surface of synthetic fibers made to look like natural grass and is increasingly being used in sports fields, childcare facilities, and streetscapes. It is also used in play areas and residential/commercial landscaping.

The Committee's discussion on the matter included:

- Staff indicating that there are no city by-laws that specifically prohibit the use of artificial grass;
- Concerns and potential issues associated with the use of artificial grass;
- Indications that other municipalities are investigating this issue, its impacts and provisions in the Zoning By-law relating to the minimum requirements for permeable material in the front yard and restrictions relating to property grade changes; and,
- Staff advised that the Zoning By-law and urban design guidelines are effective tools to address and enforce artificial turf practices.

Current Situation:

Residential yard maintenance and landscaping provisions are set out in the Property Standards By-law, Zoning By-law, and Fill by-law.

Property Standards – By-law Enforcement

Residents are required to maintain their property in a clean and tidy state, free from unsightly and hazardous conditions, contributing to the safety and appearance of the property and the surrounding neighborhood.

In the Property Standards By-law, landscaping as part of yard maintenance require that yards should be free from dead, decayed, or damaged trees and protected by sustainable ground cover that prevents the erosion of soil and reduces water runoff.

As per the above requirements for landscaping for properties within the city, there is no specification regarding the use of artificial grass or turf as long as the material used prevents erosion of soil and reduces water runoff.

Zoning By-law

Within the Zoning By-law, landscaping in residential zones is defined as the following:

“shall be either, or any combination of both, of the following surfaces on detached, semi-detached, and townhouse dwelling lots: 1) the soft surface (level or otherwise) capable of supporting the growth of vegetation (such as grass, trees, shrubs, flowers or other plants), or 2) the rough or irregular surface that permits the infiltration of water into the ground (such as rocks and stones) that is not capable of being parked upon by part of the whole of a motor vehicle. Residential Landscaping may include nonpermeable portions of noise and retaining walls or non-permeable patios and walks not situated parallel to the Residential Driveway in a manner capable of being parked or driven upon by part of the whole of a motor vehicle. Residential Landscaping may also include non-permeable stairs or stepped surfaces not capable of being parked or driven upon by part or the whole of a motor vehicle.”

The Zoning By-law does not regulate artificial grass or turf except in areas where permeable landscaping is required, such as between two driveways and a side lot line. Based on inquiries received from residents regarding the use of artificial grass, staff have been advising individuals that artificial grass and turf are not permitted in the Zoning By-law for landscaping purposes.

Public Works and Engineering – Fill By-law

Fill is defined as any type of material placed on land, including soil, stone, concrete, asphalt, sod, or turf. Although the turf is included as fill material, there is no specification on the turf being artificial.

Many Brampton residents make plans to improve their properties by landscaping, changing the grade of the land, or stripping the land. Before undertaking any of these projects, homeowners/contractors are required to apply to the City of Brampton for a Fill Permit, including when a resident wishes to install artificial grass or turf in their backyards. When residents file for a Fill Permit to change the grade of their land, City staff will inspect the property and offer advice to avoid potential drainage problems. The Fill Permit ensures that surface drainage on neighbouring lots is not affected by the proposed work, lot grading features such as swales and catch basins are not changed, that work is done safely and complies with City standards, and that City streets are kept

free of debris during the filling or stripping process. The fill permit also requires residents to not install artificial grass or turf near their property lines. Property lines are established based on the approved lot grading plan and subdivision plan.

Through the Fill Permit, the work being done must have an approved drainage system if any of the natural gradients or swales are blocked or altered. Public Works and Engineering will assess the work being proposed to identify any fill or grading issues.

Risk Management

The city's Risk Management team evaluates the installation of new landscaping material to ensure that it is level with the sidewalk and curbs. If the application is acceptable by Risk Management, then no encroachment agreement is required. A minor acknowledgment notice is issued to the property owner stating the City is not responsible for any damages. Overall, the installation of artificial grass and turf is not considered a high risk for the city.

Realty

If a resident wishes to install artificial grass/turf in the municipal right-of-way, they will be directed to contact Realty Staff to secure an encroachment agreement.

Enforcement Action

Only one complaint related to artificial grass or turf was filed in 2022 and two have been filed in 2023. The complaint filed in 2022 was concerning turf being added by a property owner, but the file was ultimately closed because there are no violation in the by-laws for using turf. Of the two complaints filed this year, one has been closed as no turf was located during inspection and the second complaint is still open and pending a zoning review.

Community Centres

The following community centres within the City of Brampton contain artificial turf to be used for recreational activities:

- Save Max Sports Centre – 3 field houses
- Memorial Arena – 1 arena, currently an artificial turf playing surface
- Terry Fox Stadium – turf soccer fields
- Central Peel Turf Field

The benefits of having artificial turf in community centres for recreational activities includes low maintenance, durability, all weather use, versatility and water conservation. Artificial turf requires minimal maintenance compared to natural grass. There's no need for mowing, watering or fertilizing. Since artificial turf doesn't require watering, it can contribute to water conservation efforts. Artificial turf is designed to withstand heavy use and can endure activities such as sports without becoming damaged or worn out to

easily. The turf can also be used in various weather conditions, including rain and remain consistent in appearance and usability.

Unlike natural grass, artificial turf provides a consistent and aesthetically pleasing appearance. It stays green and well-groomed without the fluctuations in color and texture that can occur with natural grass. Artificial turf can be installed in various locations within a community centre, such as sport fields, playgrounds, or recreational areas.

Some challenges around artificial turf being used in community centres includes initial costs, heat retention, limited environmental benefits, the potential for injury, and long-term wear and tear. The installation of artificial turf can be more expensive upfront compared to natural grass, however this cost may be offset by long-term savings in maintenance. Artificial turf can absorb and retain heat, making it hotter than natural grass, especially in direct sunlight. This can be a concern in areas with high temperatures.

While artificial turf does save water and eliminates the need for pesticides and fertilizers, it is not completely environmentally friendly. Artificial turf is made from synthetic materials, often derived from non-renewable materials. In some sports, artificial turf has been associated with a higher risk of certain injuries, particularly abrasions and friction burns, however, advancements in turf technology aim to address these concerns. Over time artificial turf can wear out, especially in high-traffic areas and this may necessitate replacement, adding to long-term costs.

Implications of Artificial Grass on Drainage Systems

The incorporation of artificial grass into outdoor spaces carries with it notable implications for drainage systems, ushering in a set of distinctions when compared to the drainage characteristics inherent in natural grass landscapes. This demarcation is multifaceted, encompassing factors ranging from water absorption to surface runoff dynamics. Delving into these distinctions provides valuable insights for property owners and the city seeking to make informed decisions about the integration of artificial turf.

Artificial grass typically has a more impermeable surface compared to natural grass. Rainwater is more likely to run off the surface rather than being absorbed into the ground. The installation of artificial grass often involves a compacted sub-base, which can further reduce water absorption into the soil. This can potentially contribute to increased surface runoff. Proper installation of artificial grass includes incorporating drainage systems such as perforated pipes or a permeable base to allow water to drain away. However, the effectiveness of these drainage systems can vary based on installation quality.

Natural grass has a more permeable surface, allowing rainwater to be absorbed into the soil. The grass roots and soil structure help with water retention and gradual release. Natural grass can help reduce surface runoff by absorbing and slowing down the

movement of water. This is beneficial for preventing soil erosion and promoting groundwater recharge.

Considering the implications, the choice between artificial and natural grass extends beyond mere aesthetic and maintenance considerations. Increased surface runoff from impermeable artificial surfaces can contribute to local flooding during heavy rainfall events if drainage systems are inadequate or overwhelmed. In regards to groundwater recharge, natural grass promotes groundwater recharge by allowing water to percolate into the soil while artificial surfaces may reduce this natural process, impacting local groundwater levels.

While artificial grass installations can incorporate drainage systems to mitigate surface runoff, they may not replicate the natural absorption and percolation capabilities of natural grass. Local environmental conditions, including climate, soil type, and existing drainage infrastructure, should be considered when evaluating the implications of using artificial grass on overall drainage systems.

Benchmarking

City of Toronto:

Toronto's Zoning By-law provides regulations regarding landscaping, and landscaping requirements that are varied based on the width of lots. Of the required landscaping in the front yard, 75% of the landscaped area must be soft landscaping and the rear yard requires 50%. Examples of soft landscaping include permeable areas made up of soil or mulch that are suitable for the planting of trees, shrubs, and grass. Artificial turf is not considered soft landscaping and does not count towards the soft landscaping requirements.

Health Impact Assessment

Toronto Public Health completed a [Health Impact Assessment \(HIA\)](#) to better understand the potential implications of the increased use of artificial turf. While the 2015 HIA focused on the use of artificial turf on sports fields and children's play spaces, its findings are also relevant to home lawns, and commercial and other landscaping applications.

The findings of the assessment concluded that the design of artificial turf surfaces and the materials used in them have changed over time to address concerns related to environmental impacts, heat, injuries, and exposure to toxic substances. As the technology continues to evolve this may reduce their negative environmental and health impacts even further.

Artificial turf surfaces become much hotter than natural grass, which can be a risk for burns or heat stress during hot weather. Unlike natural grass which contains evaporative cooling properties, artificial turf is made of several heat-retaining materials

which can significantly increase surface temperatures, substantially increase air temperatures, and thus contribute to the urban heat island effect. Widespread use of artificial grass in Toronto would make the city less resilient to extreme weather events and increase adverse health impacts.

City of Mississauga:

The City of Mississauga defines Landscaped Area and Landscaped Soft Area definitions within its Zoning By-law as any outdoor area on a lot, located at grade, that is suitable for the growth and maintenance of grass, flowers, shrubs, trees and other vegetation. There is no specific mention of artificial grass or turf.

The city's Property Standards provides an overview of standing water, which is an accumulation of stagnant water on private property that's causing a health hazard such as attracting mosquitos must be either filling or properly drained. In relation to artificial grass and turf, the installation must provide adequate drainage to avoid the negative impacts of standing water.

Within the City of Mississauga, majority of the recreational and community centres contain artificial turfs for recreational activities such as sports. Artificial turfs are installed in the Paramount Fine Foods Centre Sportsplex, Churchill Meadows Community Centre and Mattamy Sports Park and a number of parks, including Clarkson Park.

City of Vaughan:

Within the City of Vaughan's Zoning By-law, artificial turf is defined as hard landscaping. Hard landscaping elements are designed and used to enhance the visual amenity of a property. On the City's website, it clearly states that artificial turf is not considered soft landscaping, as soft landscaping must contain natural horticultural elements. Similarly, to the City of Mississauga, Community centres and parks contain artificial turf sports fields including the North Maple Regional Park.

City of Ottawa:

The City of Ottawa's Zoning By-law defines soft landscaping as organic material and vegetative in-ground plantings such as trees, shrubs, hedges, ornamental flowers and grasses. The by-law clearly states that in the case of any residential or non-residential lots developed with uses other than outdoor recreational uses, excludes non-organic surfaces including artificial grass.

The Superdome at Ben Franklin Park is an indoor artificial turf planning field which features a state of the art sports field. The natural turf for the field was replaced with Canada's only NFL level 51-ounce Omnigraff turf, which is specially designed to reduce player injury.

Next Steps

Based on the number of enforcement complaints related to artificial grass and turf which are very minimal, the use of artificial grass and turf in the City of Brampton is not a widespread issue. Through the use of the Fill Permit, staff can evaluate and identify any risks related to drainage and grading based on the work being proposed.

Although the Zoning By-law does not currently regulate or specify the use of artificial grass or turf, staff have advised individuals to not install artificial grass or turf as it is not permitted within the definition of landscaping. The Zoning By-law can be an effective tool to address and enforce artificial turf practices, which can be accommodated through a future Zoning By-law Amendment or reviewed as part of the Comprehensive Zoning By-law. The landscaping definitions in the Zoning By-law can be updated to reflect the appropriate use of artificial grass/turf and further clarity can be provided for certain zones such as residential, commercial and institutional zones on where the artificial grass/turf can be used. For example, the parent Zoning By-law for residential zones can specify if artificial grass can be installed in the front yards, rear yards or both.

The Urban Design Guidelines are intended to guide future community development from the principles of good urban design. The Urban Design Guidelines provide a minimum design standard that is expected from all developers and builders in planning, designing and constructing new communities or projects in Brampton. The guidelines address the aesthetic of properties and consideration of incorporating guidelines related to the appearance of landscaping, including the use of artificial grass can be reviewed. The guidelines can include specifications on the color, height and maintenance for the artificial grass.

Corporate Implications:

Financial Implications:

There are no financial implications associated with this report.

Other Implications:

There are no other corporate implications associated with this report.

Strategic Focus Areas:

This application is consistent with the “Health and Well-being” strategic focus area. It focuses on citizens belonging, health, wellness and safety.

Conclusion:

As part of the discussion at the September 6, 2023, Committee of Council meeting, staff noted that there are no city by-laws that specifically prohibit the use of artificial grass or turf. Artificial grass/turf is made up of synthetic fibers made to look like natural grass and is seen being used in recreation facilities to residential and commercial streetscapes.

This report provides an overview of the Property Standards By-law, Zoning By-law, and Fill By-law and how they relate to artificial grass and landscaping requirements.

Based on the minimal involvement of various departments, the limited number of complaints received by enforcement over the last two years and there being no specific by-laws related to the use of artificial grass/turf, the use of artificial grass/turf is not seen as an increasing issue for the city. The use of the Fill Permit allows staff to identify any drainage and grading issues if residents want to make changes to their landscaped area.

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