

Encroachment Agreement - Geothermal Heating and Cooling System connecting 60 Sussex Avenue to 700 Spadina Avenue and 54 Sussex Avenue

Date: June 13, 2022

To: Toronto and East York Community Council

From: Director, Permits and Enforcement, Transportation Services

Wards: Ward 11, University-Rosedale

SUMMARY

This staff report is about a matter which Community Council has delegated authority from City Council to make a final decision.

Transportation Services is in receipt of a request from The Governing Council of the University of Toronto to install geothermal pipes within the public right of way, across Sussex Mews and an L-shaped public lane, which will connect the geothermal exchange system under the Robert Street Playing Field at 60 Sussex Avenue to a proposed new 3-storey townhouse complex at 54 Sussex Avenue and proposed new 23-storey student's residence building at 700 Spadina Avenue. Transportation Services has reviewed the request and determined that the geothermal pipe routing will not impact negatively on the public right of way, and permission should be granted to the owners for its installation and ongoing maintenance.

The purpose of this report is to request authority to enter into an encroachment agreement with the University of Toronto (the "Owner") to permit the Geothermal Pipes (the "Encroachment") under Sussex Mews and the L-shaped public lane abutting 54 Sussex Avenue and 700 Spadina Road.

RECOMMENDATIONS

The Director, Permits and Enforcement, Transportation Services recommends that:

1. Toronto and East York Community approve the installation of the Geothermal Pipes within portions of Sussex Mews and L-shaped public laneway abutting 54 Sussex Avenue and 700 Spadina Avenue subject to the Owner(s) entering into a license agreement with the City of Toronto, agreeing to but not limited to the following:

Encroachment Agreement- 60 Sussex Ave to 700 Spadina Ave and 54 Sussex Ave

- a. indemnify the City from and against all actions, suits, claims or demands and from all loss, costs, damages, and expenses that may result from such permission granted and providing of an insurance policy for such liability for the lifetime of the Agreement in a form as approved by the Deputy City Manager and Chief Financial Officer and in the amount not less than \$2 million or such greater amount as the Deputy City Manager and Chief Financial Officer may require;
- b. maintain the Geothermal Pipes at their own expense in good repair and a condition satisfactory to the General Manager of Transportation Services and will not make any additions or modifications to the system beyond what is allowed under the terms of the Agreement;
- c. obtain approval from Toronto Building;
- d. obtain approval from Toronto Water and satisfy any requirements that Toronto Water may have;
- e. obtain clearances and/or sign-offs from all affected utilities and satisfy all conditions imposed by any utilities that may be affected by the installation and maintenance of the geothermal pipes;
- f. provide "as-built" drawings within 60 days of completing the installation of the geothermal pipes;
- g. provide a financial security in the amount as calculated by the General Manager to cover the cost for the City to complete permanent repairs associated with the restoration of the pavement of Sussex Mews and the public laneway and agree to pay all costs that may exceed this amount;
- h. pay an annual Real Estate appraisal license fee for the use of the public right of way as calculated by the Director of Real Estate Services, Facilities & Real Estate, subject to periodical assessment by the Consumer Price Index (CPI);
- i. limit the life of the Agreement to the removal of the geothermal system or the date of demolition of the building at 700 Spadina Avenue, whichever is the less;
- j. pay for the costs of preparing the Agreement and the registration of the Agreement on title; and
- k. accept such additional conditions as the City Solicitor or the General Manager of Transportation Services may deem necessary in the interest of the City.

FINANCIAL IMPACT

The University of Toronto will be responsible for all associated costs of constructing and maintaining the Geothermal Pipe System. There is no financial impact to the City as a result of this report.

DECISION HISTORY

At its meeting of December 15, 2021 City Council adopted item TE29.37 "Construction Staging Area - 698-706 Spadina Avenue and 54 Sussex Avenue" and approved the application submitted by Daniels HR Corporation to close the west sidewalk and the parking layby lane on Spadina Avenue, between Sussex Avenue and a point 47.5 metres to the north, for a period of 30 months to accommodate a construction staging area, subject to certain conditions.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2021.TE29.37>

At its meeting of June 25, 2019 City Council adopted item TE7.12 "698 and 700 Spadina Avenue - Rental Housing Demolition Application - Final Report" and approved the application to allow for the demolition of six existing rental dwelling units located at 698 and 700 Spadina Avenue, subject to certain conditions.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2019.TE7.12>

At its meeting of July 23, 24, 25, 26, 27 and 30, 2018 City Council adopted item CC44.25 "698-706 Spadina Avenue and 54 Sussex Avenue- Zoning By-law Amendment Application - Request for Directions" and approved of the confidential instructions to staff and the public release of the confidential instructions to staff.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2018.CC44.25>

At its meeting of August 12, 2014 Toronto and East York Community Council adopted item TE34.174 "Heritage Listing - 698, 700 and 704 Spadina Avenue and 54 Sussex Avenue" which directed the Manager, Heritage Preservation Services to assess the heritage value of 698, 700 and 704 Spadina Avenue and 54 Sussex Avenue and report back to Toronto and East York Community Council regarding the appropriateness of Heritage Designation.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.TE34.174>

COMMENTS

Issue Background:

The University of Toronto completed construction of a geothermal exchange system underneath the Robert Street Field located at 60 Sussex Avenue, in 2021. This field is intended to provide energy to the new 23-storey student residence building at 700 Spadina Avenue which will house 508 beds, and a 3-storey stacked townhouse building at 54 Sussex Avenue which will contain 10 units (Attachment 1 – Location Map). The geothermal system will play a significant role in reducing the University's carbon footprint, and will help meet the ambitious carbon reduction targets of the University Climate Change Coalition - a group of leading research universities in North America committed to reducing greenhouse gas emissions - as well as the targets set by of the City and the Province of Ontario.

The Robert Street Field geothermal system is located on the west side of Sussex Mews, and the residence building and townhouses are located on the east side of Sussex Mews. The proposed Geothermal Pipes will be routed underneath portions of Sussex Mews, the L-shaped public lane, and lands owned by the University of Toronto that will be conveyed to the City to widen the L-shaped lane, in order to connect the geothermal exchange system under the Robert Street Field to the student residence building and the townhouse complex (see Attachment 2 – Pipe Routing).

The proposed Geothermal Pipes are in keeping with City initiatives to reduce greenhouse gas emissions, and Transportation Services is in support of this alternate form of energy generation encroaching within the public right of way. The geothermal heating/cooling system is an established technology requiring a significant length of "ground loop" pipes buried underground. Heat is exchanged with the ground through these pipes. The ground heating/cooling Geothermal Pipes consist of a series of ground loops of high density polyethylene pipes. Polyethylene is essentially the same material used for natural gas lines. The estimated life span of the ground loops exceeds 25 years. Manufacturers offer over 50 years of warranty for this type of pipe which do not corrode or support biological growth, as proven by their use for natural gas and other chemicals.

In a worst-case scenario, if a pipe were to break the system would shut down that individual loop and the damaged pipe could be excavated and replaced in a scheduled, non-emergency manner. The remaining loops can be separately valve-controlled and any shortfall in heating will cause the system to revert to a backup boiler. The government-approved fluid within the pipes is essentially water with an environmentally friendly antifreeze that is non-toxic and offers no detrimental effect to the environment if it were to leak from the pipes.

The encroachment will consist of 52 pipes with a diameter ranging from 75mm-150mm, within a 0.793m x 5.372m cross section of sand bedding. The pipes will commence approximately 1.95m below the grade from the pavement surface. The cut dimension on Sussex Mews will be approximately 5.50m x 5.54m, on the laneway, Ln N Sussex E Sussex Mews adjoining the 54 Sussex Ave the cut dimension is approximately 21.50m

x 5.50m, on the laneway abutting 700 Spadina Ave, Ln W Spadina N Sussex Ave is 3.50m x 18.00m. The estimated total installing time on Sussex Mews is less than 30 days, the laneways are currently occupied under the staging permit for the development of the townhouse complex and student residence building.

Once the project is complete, there will be no permanent effect on the use of the surface of the laneway.

As there may be impacts to existing utility infrastructure, it will be the Owner's responsibility to undergo a public utility review and obtain clearances from the affected utility agencies, including satisfying their requirements, prior to issuance of a construction permit authorizing work within the public right of way.

Transportation Services Staff will consult Appraisal Services, Real Estate Services, to determine the annual rental licence fee for the Geothermal Heating/Cooling System within portions of the public laneway adjacent to 54 Sussex Avenue, and 700 Spadina Ave. It is recommended that the initial annual rental fee be utilized and the fee be adjusted annually by the Consumers Price Index.

Under Municipal Code Chapter 743, the General Manager of Transportation Services does not have authority to enter into encroachment agreements for Geothermal Pipes, therefore Community Council approval is required. An encroachment agreement between the City and the Owner will set out the Owner's responsibilities for the maintenance, repair and operation of the geothermal system.

Transportation Services has reviewed the application and determined that the construction and maintenance of the encroachment will not impact negatively on the public right-of-way. Photos of the properties together with the adjacent public L-shaped lane are shown on Attachment 3.

The Ward Councillor has been advised of the recommendations in this report.

CONTACT

Elio Capizzano, Manager, Permits and Enforcement - Transportation Services, 416-392-7465, Elio.Capizzano@toronto.ca

SIGNATURE

David J. Twaddle, CET
Director, Permits and Enforcement, Transportation Services

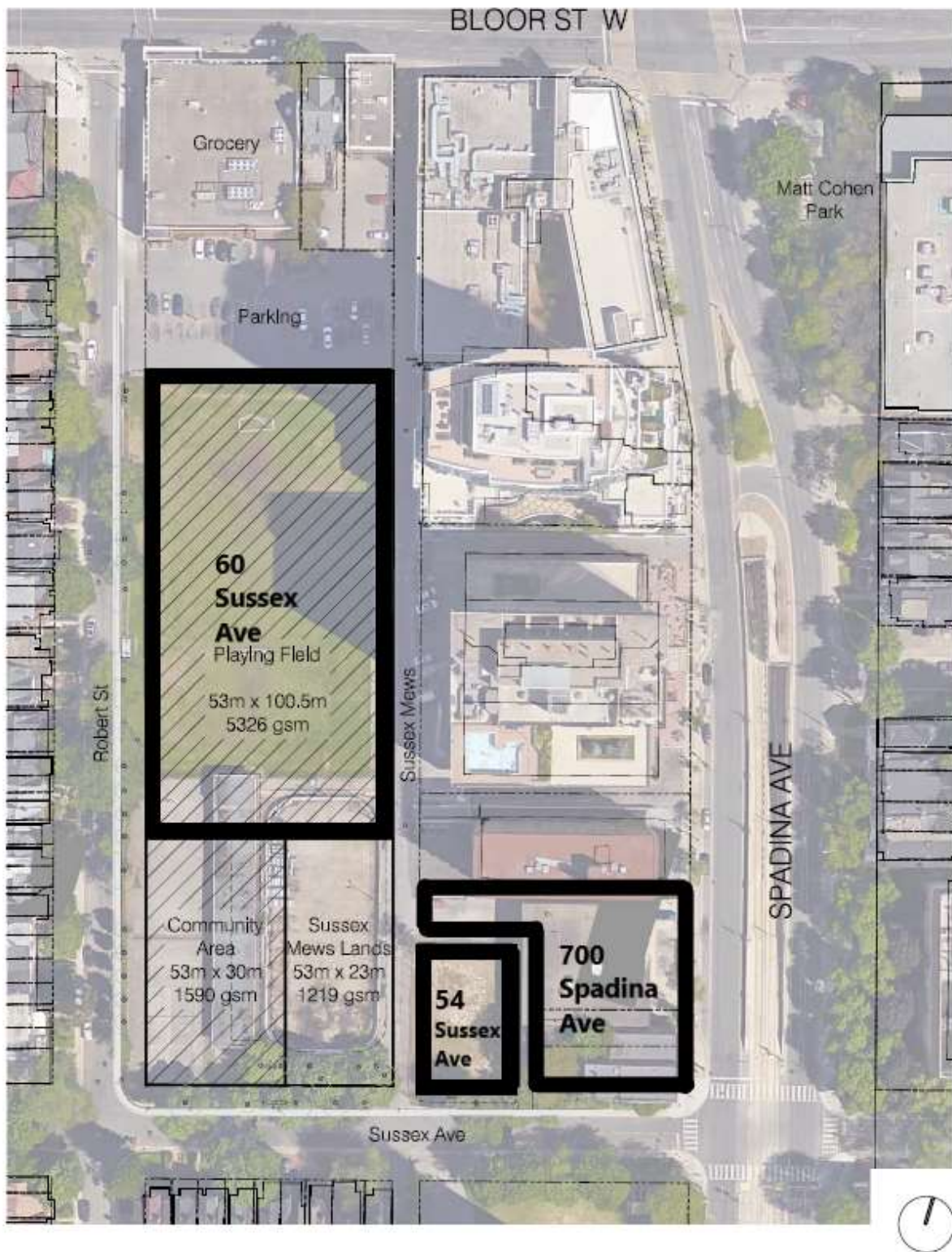
ATTACHMENTS

Attachment 1: Location Map

Attachment 2: Drawing - Geothermal Piping Layout

Attachment 3: Photos of Sussex Avenue, Sussex Mews and L-Shaped Lane

Attachment 1: Location Map-700 Spadina Ave, 54 Sussex Ave, 60 Sussex Ave



Attachment 3: Photos of Sussex Avenue, Sussex Mews and the adjacent Laneway





