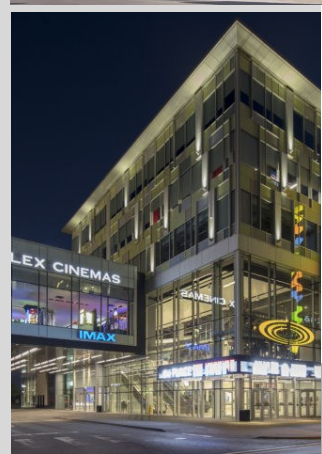


SUN & SHADOW STUDY

TERMS OF REFERENCE
FEBRUARY 2023



INTRODUCTION

PURPOSE

A Sun/Shadow Study is a technical document that provides a visual model and written description of the impact of shadows cast by a proposed development on adjacent properties (e.g. residential, commercial, employment and institutional areas) and the public realm (e.g. sidewalks, open spaces, parks and plazas). This study is conducted to evaluate the impact of shadows at various times of day during spring, summer, fall and winter.

WHEN IS THIS REQUIRED?

A Sun/Shadow Study is submitted as part of a development application (e.g. Site Plan and Zoning By-law Amendments) for development projects over 20 meters or 6-storeys in height.

A Sun/Shadow Study may be requested for development applications lower than 20 meters near shadow sensitive uses (e.g. parks, cemeteries, schools etc.). The requirement for, and scope of this work, should be discussed with the Planner and Urban Designer in pre-application consultation meetings.

WHO PREPARES THIS?

The Sun/Shadow should be prepared by a licensed architect, engineer, or planner with demonstrated experience. The study shall include the name of the firm and individual who prepared it.



WHY DO WE NEED THIS?

A Sun and Shadow Study is needed to ensure that the development application conforms to applicable by-laws and policies from the City of Markham 2014 Official Plan, including, but not limited to:

6.1.4.2 To design streetscapes that support the functional requirements of streets and blocks and create a suitable interface and compatibility with the use, height and density of abutting development by promoting:

b) pedestrian comfort and safety

6.1.8.4 To design and place buildings on a site to be compatible with adjacent or abutting development, a cultural heritage resource itself and adjacent lands, streetscape and parks and open spaces by addressing, where appropriate:

a) transitions in height and massing, including the relationship to the width of the public right-of-way, and adequate setbacks between buildings, the public realm and adjacent or abutting development;

e) comfortable microclimatic conditions including sunlight access and wind conditions, public safety, and adequate privacy conditions for residential buildings and their outdoor amenity areas;

h) building design that:

i) incorporates architectural detailing and features to increase comfort, add interest and achieve a good relationship with neighbouring development

6.3 Designing Sustainable New Communities

The design of these new communities should address, among other things, compatibility with the Greenway System, and the provision of an appropriate transition to established neighbourhoods and employment areas to minimize the potential adverse impact of one on the other.



STRUCTURE AND FORMAT

WHAT SHOULD BE INCLUDED?

Submission Requirements

As part of the Sun/Shadow Study, visual models and a summary letter should be provided to support the proposed development.

3D Model

The model should clearly indicate the development site; property boundaries; all streets and blocks; existing building footprints and massing; adjacent parks, cemeteries, accessible open spaces, school yards and any other shadow-sensitive uses; and the proposed development context. The shadow diagrams should use contrasting colours to differentiate between existing development context and the proposed development context.

Test Times

Sun/Shadow tests should be done for March 21 June 21, September 21 and December 21 at the following hours:

9:18 a.m., 11:18 a.m., 1:18 p.m., 3:18 p.m. and 5:18 p.m. (no 5:18 p.m. for the month of December)

Please note that additional dates and times may be requested on a case-by-case basis at the discretion of the City of Markham.

Summary and Evaluation Letter

In addition to the model graphics, a letter summarizing the sun/shadow impacts of the proposed development is required. This should include a summary evaluating the shadow impact and a description of any mitigating features that have been incorporated into the site and building design. If applicable, provide a description and assessment of locations and uses in and around the proposed development that do not require shadow impact evaluation.

Submission Requirements

Digital copies of the Sun and Shadow Study should be provided for distribution and review by the Planning & Urban Design department at the City of Markham. Large mounted versions of critical times or power point images may be requested for public meetings.

WHAT ELSE SHOULD WE KNOW?

For more information, contact:

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