

# ANGULAR PLANE STUDY

**TERMS OF REFERENCE**  
**FEBRUARY 2023**



# INTRODUCTION

## PURPOSE

The Angular Plane Study is a study of the physical impacts associated with development on adjacent streets, parks, opens spaces and other sensitive uses. Through visual diagrams and illustrations, the study should demonstrate how new development relates to existing context. The analysis will be completed to evaluate the transition of height, mass and scale of a development, and may require assessment from multiple sides of the building.

## WHEN IS THE ANGULAR PLANE STUDY REQUIRED?

Depending on the location, scale, intensity and context of the development, an Angular Plane Study may be requested by the City as part of a complete development application for an Official Plan Amendment, Zoning By-law Amendment and/or Site Plan Control applications.

An Angular Plane Study will be requested where mid - and high-rise developments are proposed within or adjacent to existing low-rise neighbourhood areas, heritage districts, or sensitive land uses such as parks and open spaces where building height transition parameters are required to preserve key views, ensure access to sunlight/sun penetration and balance privacy conditions between properties.

The need for an Angular Plane Study will be evaluated on a case-by-case basis, to be determined by the Urban Design department at the pre-consultation stage.



## WHO PREPARES THE ANGULAR PLANE STUDY?

An Angular Plane Study should be prepared by an urban designer or licensed architect (OAA).

## WHY DO WE NEED THE ANGULAR PLANE STUDY?

The Angular Plane Study is intended to achieve the goals of the Official Plan policies, specifically:

- 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, streetscapes 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;
- In considering an application for development on lands designated “Residential Mid Rise’ (8.2.4.5), ‘Residential High Rise’ (8.2.5.5), ‘Mixed Use’ (8.3.1.4), ‘Commercial’ (8.4.1.7), and ‘Employment’ (8.5.1.3) that are adjacent to areas designated for low rise development, proposed buildings shall be designed to respect an angular plane measured from the boundary of the designation in which the low-rise building is located in accordance with Sections 6.1.8.9 and 6.1.8.10

## STRUCTURE AND FORMAT

### WHAT SHOULD BE INCLUDED?

#### Submission Requirements

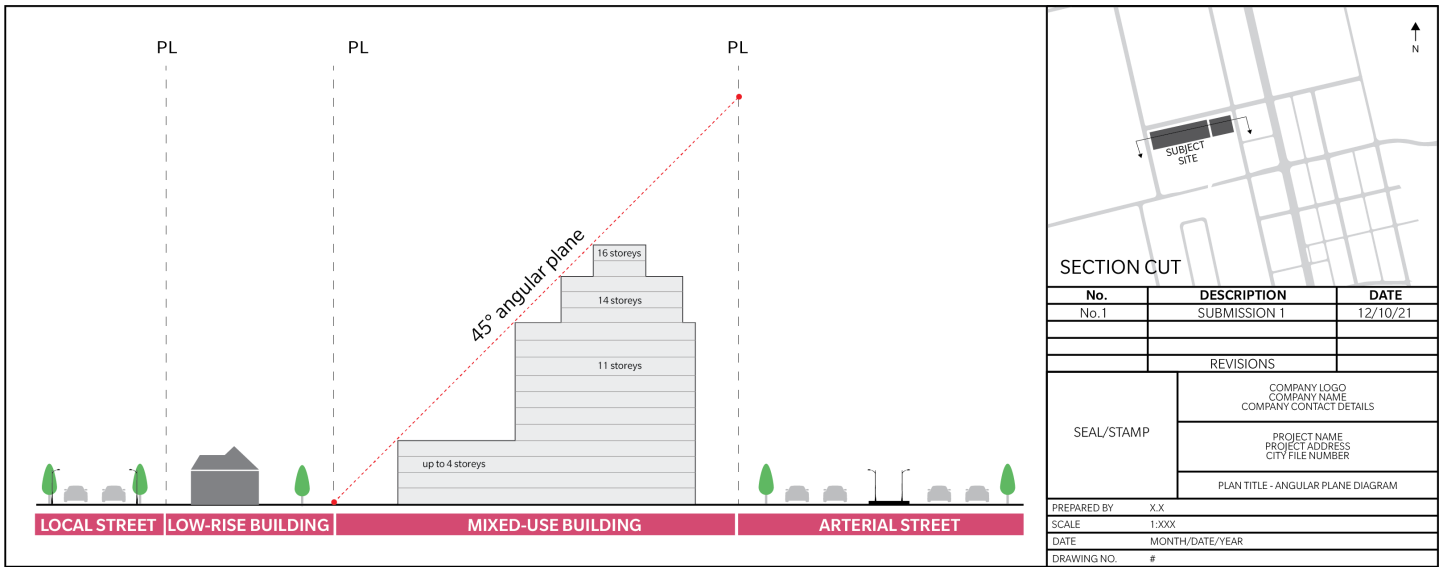
The Angular Plane Study should include a visual illustration of impacts on surrounding development, based on the City’s Markham Built Form, Height and Massing Principles (2010).

The analysis may be required to evaluate rear yard transitions, side yard transitions, corner site, and street frontages. Through the pre-consultation or review process, the Urban Designer may identify specific or additional views required to assess the development proposal.

See below for additional standard requirements.

- Diagram can be shown as a scaled cross section drawing or simple 3D model
- Diagram to include existing surrounding buildings and roads
- Clearly show the angular plane on drawing, highlighting if any portions of the development is outside the angular plane
- Diagram to accurately reflect grading changes
- Provide key plan, showing location of where angular plane was measured from
- Provide title for drawing, including view
- Label all surrounding uses and abutting roads
- Show all property lines
- Show dimensions, including building heights and number of storeys, lot depths and right-of-way widths

## Example of Angular Plane Study Diagram



## Grade Changes

Where there are different grade levels, the 45-degree angular plane is to be taken at the point where there is the greatest grade change (ie. lowest grade elevation) at the property line. This will ensure that neighbouring properties are not subject to additional shadow impacts resulting from changes in grade, thus creating potentially taller buildings adjacent to these shared property lines.



## WHAT OTHER RESOURCES ARE THERE?

- City of Markham Official Plan (2014)
- City of Markham Built Form, Height and Massing Study (March 2010)