3D Massing Submission Requirements

Description

A 3D computer-generated model of the proposed development allows staff to evaluate the proposal's physical impacts. The model will be integrated into the City's Digital Twin and is used to evaluate the impacts of the scale, its spatial relationship into a geographic context of the proposed development, its overall urban integration, and its sun/shadow impacts. The model in context will be used by staff for the review of the application and for potential public consultation.

Authority To Request / When Required

The following application types will require a 3D building model associated with a mid-rise and/or highrise building where a design brief is a requirement of a complete application:

- Zoning By-Law Amendment
- Official Plan Amendment
- Plan of Subdivision
- Site Plan
- Plan of Subdivision

For the above-noted applications, applicants must include all supporting features from the following studies, if the additional materials are required for the application or subject to review by the City's Urban Design Review Panel:

- Site plan
- Landscape plan
- Grading and Drainage Plan
- Building Elevations
- Shadow Analysis

Reference data for any other studies may be required and/or 3D Building Models may be required for other application types or for applications <5 stories, at the discretion of the Lead Planner or lead City Urban Designer.

A Building Massing Model is required for illustrating and reviewing the proposal in its existing and planned context. The requirement for, and scope of this work, should be discussed with the Lead Planner and Urban Designer in pre-application consultation.

Details for the submission of the Model are as follows:

- **File Name:** Name the file with the project file number and short address. For example: “Dxx-xx-xxxx_Address.file” or if in pre-consultation PCxx-xxxx_Address.file
- **File Format:** Compress the file to a ZIP file for large files (submission should not exceed 200MB)
- **Encryption:** Do NOT encrypt drawings with password protection.
- **Measurement Unit:** Metric scale (mm or m) and indicated.
- **Horizontal Datum:** The horizontal datum accepted is NAD 1983 CSRS MTM 9 Epoch 2010 (EPSG:2951)
- **Vertical Datum:** The vertical datum accepted is CGVD2013a (EPSG:9245)
- **Rotation from True North:** Models should have declination from true north indicated in the relevant metadata of the model
- **Address:** Model header data should include the street address of the property.
- **Detail:** Level of Detail 2 (LOD2) model that includes:
    - Building envelope only/external structure. Ensure that all polygons are closed
    - Relevant layers ONLY (landscaping component if part of a larger landscaping plan or major architecture piece)
    - Include the Property Survey Information in model with dimensions and Average Grade @ sea level
    - Include the elevation reference benchmark including a note with model elevation source and datum.
- **Element Structure:** Separate elements into different layers, BIM contextual features (Architectural, Electrical, Mechanical, etc.) and then create a “block” or “group”.
- **Sketch Lines:** Delete all hatching but leave any polygons or polylines needed.
- **3D Objects:** Convert all Building Information Modeling components/objects to Polygonal modeling objects
- **Required Exterior Features:** To snap your model into context, the City requires:
    - Property Survey Information with dimensions and Average Grade @ sea level

- street name label
- curbs, parking and ingress/egress
- underground parking outline with entrance/exit
- building outlines and minimum setbacks with dimensions/floor maximum elevations
- loading areas/docks
- podiums and heights description

Accepted Model Formats

Preferred:

- IFC – ISO 16739-1:2018 (Simple BIM Standard available)
- RVT – Revit 2020 or later
- SKP – SketchUp 2020 or later
- FGDB – ESRI 3D Multipatch File Geodatabase

Acceptable:

- 3D DWG/DXF – AutoCAD 2020 or later

Notes for 3D DWG/DXF AutoCAD files:

- Do not reference external drawings (xref). Instead, embed any referenced files within the submittal package (bind xref files with the insert option under the bind command).
- Ensure that all the work is scaled correctly and in model space, not in paper space.
- Your file might be converted to Microstation.

Please organize the model into 3 layers:

- Envelope
- External Structure Element
- Property Survey Information
- Other Data (For example, interior features)

Reference Data

To support collaboration with the construction and developers' community, the city will provide a 3D context LOD1 model on our Open Data – 3D Massing page. The data is available in two formats; Autodesk DXF and ESRI File Geodatabase. The models are segmented to the latest Neighborhood boundaries.

Additional context information can be requested through the Geoinformation Center (GIC). Some of the datasets of interest to 3D modeling include the most recent Digital Elevation Model derived from aerial LiDAR.

Questions Regarding the Building Mass Model

All questions relating digital submissions should be directed to the Lead Planner of your application.

Technical concerns may be directed to the lead City Urban Designer.

Disclaimer

The City of Ottawa is not liable for any deficiencies in the completeness, accuracy, content, or fitness for any particular purpose or use of the 3D Building Mass Model, or applications utilizing the 3D Building Massing Model, provided by any third party.

References

Open Data Ottawa – 3D Massing Contextual Data

Geoinformation Center