3D Modelling Requirements for Development Applications – Technical Guide

Introduction

The City has adopted Local Planning Policy 7.8 – 3D Modelling Requirements for Development Applications (LPP 7.8) which sets out the circumstances under which as 3D model is required. This information sheet details the technical requirements for submission of a 3D model with a development application.

When is a 3D model required

A 3D model is required to be submitted with an application for development where a development meets the criteria for referral to the City's Design Review Panel.

Generally the following proposals will be considered by the City's Design Review Panel:

- All planning proposals that meet the requirements to be determined by a Development Assessment Panel under the Planning and Development (Development Assessment Panels) Regulations 2011, except for any Form 2 application to amend or extend the term of approval unless the amendment involves design changes.
- All planning proposals involving the construction of, or substantial redevelopment of, buildings of four storeys or greater.
- All planning proposals subject to assessment under SPP7.3 Volume 2 Apartments, involving five (5) or more residential units, or where review of the panel is considered appropriate.
- Any planning proposal that has significant strategic planning impacts in terms of the implementation of a strategic planning objective, the scale of the development, or is considered by the City to be significantly different from the predominant and expected pattern of land use within the locality.
- Any relevant Local Planning Scheme amendment, Structure Plan, Local Development Plan/Precinct Plan, Activity Centre Plan or Local Planning Policy proposal (including design guidelines) referred by the Manager Planning Services or Council.
- Any other matter as determined by the Manager Planning Services or Council.

Technical specifications

All 3D digital models must adhere to the following requirements:

a) General

- Accurate and true representation of the proposed development.
- The entire development must be modelled up to the property boundary.
- Only the external elements (except floor slabs) are required.
- Model must include correct ground level fall across the site.
- Only the external building envelope is to be provided. Internal layouts must be deleted.
- Please ensure that there are no missing or displaced parts of the model after export (except those that are intentionally removed).

b) Position
- The base units must be in metres (0.00m).
- The height, as a Z value, must be used in accordance with the Australian Height Datum (AHD).
- If geo-referenced, use the GDA94 / MGA zone 50 coordinate system.
- If not geo-referenced, models need to be provided as object-centred, having both the origin and pivot point at 0,0,0. A plan must also be provided that indicates applicable offsets from the title boundary if the model does not occupy the entire site.
- Rotation must be in accordance with the cadastral alignment.

c) Polygons
- All redundant lines, splines, helpers, dummies, cameras, trees, shrubs, vehicles, casework, furniture and minor fixings must be removed.
- All unnecessary features must be removed from the model, especially internal features, spherical or tubular objects and overly complex features.
- Redundant and duplicate polygons, lines or textures must also be removed.
- Models should be exported as a shell, where walls and glass panels are made into a full 3D form.
- Models must have only single-sided faces that do not overlap and normals facing outward.
- A single face with no additional polygons should replace internal, external and side faces.
- Highly complex external features such as vegetation should be removed or simplified and replaced with billboard style vegetation models.

d) Textures
- Only standard material types will be accepted (No materials which are specialised for professional rendering software, e.g. Mental Ray, V-Ray).
- Textures sent along with the model must be in JPG, TIFF, or PNG format.
- Colours must be added if textures are not supplied.
- The model must be purged of all unused texture and object links.

Specific software guidance

SketchUp *Preferred format*

- Remove/delete all furniture, fixtures, entourage and other unrequired objects
- Use standard colours or materials in JPEG or PNG formats
- Opacity maps can be used (preferably PNG)
- Provide clean model in SKP 8.0 format

Autodesk 3DS Max

- Remove/delete all furniture, fixtures, entourage and other unrequired objects
- Use standard colours or materials in JPEG or PNG formats
- Use diffuse colours or textures in JPEG; TIFF or PNG formats
- Opacity maps can be used , PNG format only

Autodesk Revit

- Remove/delete all furniture, fixtures, entourage and other unrequired objects within the model. This includes stairs and handrails
- Ensure 3D view detail level is set 'Coarse'
- Export model to one of the specified formats

Archicad

- Turn off or delete non-required objects within a 3D view and set scale to 1:1
- Include any textures with the delivered model folder
- Export model to one of the specified formats
- Ensure correct colours have been assigned to objects when saving to SKP