

# ADVISORY NOTE – 3D DIGITAL MODELLING

The purpose of this advisory note is to provide technical guidance for submitting 3D Digital Models to the Department of Transport, Planning and Local Infrastructure (DTPLI).

## DTPLI and 3D Digital Modelling

DTPLI - through the Urban Design Unit and State Planning Services - is now using 3D built form modelling software. The software is based on highly accurate GIS and gaming techniques.

DTPLI is using the modelling for a number of functions including:

- strategic planning - calculating density, floor areas and site capacity for projects of state significance
- assessing planning applications - testing the impact of building heights and setbacks on surrounding buildings and public realm, including accurate shadow and view line analysis
- determining maximum built form envelopes and other briefing parameters for key sites
- building a database of Planning Permits' history within the City of Melbourne, modelling permits issued by both the Minister and Council in one accessible system.

The model covers the City of Melbourne and parts of the City of Port Phillip. The coverage of the model, as well as the number of users, is expected to increase.

## DTPLI Requirements

DTPLI requires that 3D digital models are provided to State Planning Services with any application for a major development that will be considered by the Minister for Planning at least within the City of Melbourne.

It is also recommended that 3D digital models are produced for any briefings or meetings with State Planning Services to enable more informed discussions about proposed developments.

## Technical Specifications

The 3D models should be provided to DTPLI in the format of Autodesk FBX or Google SketchUp SKP. The following guidelines and settings should apply to all models provided:

- Base units in meters
- Geo-referenced to MGA55 Projection
- Height in absolute units (RL - Relative Level)
- Maximum total combined texture size for a single building - 2048x2048 or less.
- Ensure only A-Z and 0-9 characters are used in texture names. Spaces, symbols and other characters are not supported.
- Split internal and external surfaces into two separate files for improved performance, smaller file sizes, and the ability to only load external surfaces where internal surfaces are not required.

*NOTE: We only require external modelling; internal layouts remain private and would only overload the model.*

For optimal compatibility, it is recommended to generate FBX files from Autodesk 3DS Max and SKP files from Google SketchUp.

Guidelines and settings for specific platforms can be found below:

#### Autodesk 3DS Max

- Use the 3DS Max Standard Material on all surfaces
  - Use diffuse colours or a diffuse texture in a PNG, TGA, DDS or JPEG format
  - Alpha channels in a TGA or DDS texture can be used for transparency (windows, vegetation)
- Provide model in the Autodesk FBX format with the Embed Media option enabled

#### Google SketchUp

- Use standard SketchUp material colours, or textures in a PNG, TGA or JPEG for general textures
- Alpha channels in a TGA texture can be used for transparency (windows, vegetation)
- Provide model in the SketchUp SKP format, DPCD will translate into FBX

#### Autodesk Revit

- Basic surface colours are supported.
- Texturing is currently not supported from Revit, however textures can be added to the FBX model with 3DS Max or SketchUp
- Ensure 3D View Detail Level is set to 'Coarse' to reduce polygon count when exporting
- Provide model in the Autodesk FBX format

#### Additional Formats

SketchUp Pro can be used to translate a number of file types into the SKP format. These include AutoCAD (.dwg, .dxf), 3DS files (.3ds), DEM (.dem, .ddf), and Google Earth/ COLLADA files (.kmz, .dae).

3DS Max can also translate a variety of formats into the FBX format including AutoCAD (.dwg, .dxf), 3DS files (.3ds), Lightwave (.obj), Collada (.dae), among others.

#### Textures

External textures can be used, and will be visible in the Urban Circus application when the correct formats and settings listed in the guidelines above are used. These textures will provide a greater understanding of the building in context.

#### Delivery

Digital files may be delivered by email, to [david.sowinski@dtpli.vic.gov.au](mailto:david.sowinski@dtpli.vic.gov.au) if files are smaller than 5MB. Ensure that the site address is clearly provided, and a site plan or other plan to ensure the model is correctly inserted in context, and please note that street addresses can be misleading.

If files are larger than 5MB, it is recommended to use an internet-based file sharing service such as DropBox or YouSendIt, and send the link to the above email address.

Alternatively, files may be provided on CD or USB format. They should be clearly marked as follows:

Attention David Sowiński  
Department of Transport, Planning and  
Local Infrastructure  
Urban Design Unit  
Level 15  
1 Spring Street  
Melbourne VIC 3000

If there are any technical issues, please contact David Sowiński, Senior Urban Designer and Project Manager either on the above email address or by phone on (03) 9094 8449.

*NOTE: As per the Government and industry requirements, by submitting the model you grant, and warrant that you are authorised to grant, the State of Victoria free of charge a sub-licensable, irrevocable, non-exclusive worldwide licence to use the model for any planning related purposes. Further, you indemnify the State against any loss, damage, claim, action or expense which the State (including its officers, employees and agents) suffer as a direct result of a breach of this warranty.*