Three-Dimensional Modelling of a Cityscape: Vancouver, Canada

Many steps were required to create the 3D model of Vancouver and these were performed over a span of several years. The following stages indicate the process that I followed to get to the final result. It is necessarily the next most efficient method; however, it was accomplished by BNR using data available (in Jack Gill’s time, and software).

Digiting

No building footprint data was available at all, but there was an existing map of downtown Vancouver. This map showed individual building footprint boundaries as well as information on the number of floors in the building. These building footprints were scaled to the number of floors as they were digitized onto a computer. The street network file and other data sources, such as elevation, were in a UTM coordinate system so it was easiest to make the data using the same coordinate system.

The image titled "Landuse in the Downtown Peninsula of Vancouver" shows the cartographically enhanced results from digitizing the parcel boundaries. Also, because the underlying grid data information on the number of floors, a general height can be estimated for each building to give a quick estimate of what the cityscape looks like. For a more detailed view, accurate building footprint data is needed.

Buildings footprints were assigned to diaphanous ensembles. The ensembles were not blended in as there is potential visual ambiguity, especially with the street lines. As can be seen in the image titled, "Aerials of Downtown Core" (buildings blue line from the top corner of the page) for instance, the buildings’ footprints are framed to the tallest buildings in the area. Finally, because the ensembles are digitized from 1995, work was done to optimize the buildings’ footprint data with building footprints that were digitized in 1995. This was to ensure a consistent elevation and set point inside the core area on the diagonal. The ensembles are then assigned to each building. The ensembles are then assigned to each building.

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Techniques used to create a three-dimensional cityscape of downtown Vancouver were very new to engage the 3D world with the GIS world. While this was taken to be as accurate as possible, the clustering of the project was not in the assigned footprints; instead, some area and general information was used to create a three-dimensional modeling that was integrated with GIS. For most models, it was essential to have an accurate building footprint layer and a building layer with elevations.

Downtown Vancouver Building Footprints

Airphoto of Downtown Core

The Downtown Core of Vancouver

A Bowl and Sails: Harbor Center and Canada Place

The second level of the Harbour Centre tower was extended a 30-meter wall to the bottom of the building (image left). The wall was originally used as the building’s elevator core and was later used as the building’s footprints. This was done to extend the building’s footprint above the ground and to allow for the realistic appearance.

Buildings were extended in Autocad using the building length and building footprint information as the building’s footprint above the ground and was later used as the building’s footprint above the ground. This was done to extend the building’s footprint above the ground and to allow for the realistic appearance.

In this example that was contextualized, the floor of the taller buildings on the near the edge of the buildings to 20-30 meters above the ground level. These buildings were extended in Autocad using the building length and building footprint information as the building’s footprint above the ground and was later used as the building’s footprint above the ground. This was done to extend the building’s footprint above the ground and to allow for the realistic appearance.

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A Dome, Sphere, and an Overhang: BC Place Stadium, Science World, and The VanCity Building

Several buildings were used for 3D modeling. These were the BC Place Stadium, Science World, and VanCity Building. These were used for the overhangs and building. These were used for the overhangs and building. Two separate clusters could be used to be 3D modeled. These were used for the overhangs and building. Two separate clusters could be used to be 3D modeled. These were used for the overhangs and building. Two separate clusters could be used to be 3D modeled. These were used for the overhangs and building. Two separate clusters could be used to be 3D modeled. These were used for the overhangs and building. Two separate clusters could be used to be 3D modeled. This was done to extend the building’s footprint above the ground and to allow for the realistic appearance.

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